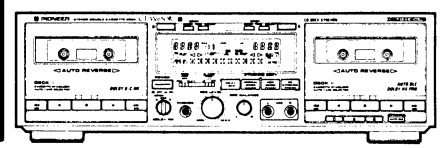
PIONEER®
*The Art of Entertainment*

# Service Manual



ORDER NO.
**ARP2207**

## STEREO DOUBLE CASSETTE DECK

# CT-W650R
# CT-W550R
# CT-W550R-S

### CT-W650R, CT-W550R AND CT-W550R-S HAVE THE FOLLOWING:

| Type | Model | | | Power Requirement | Remarks |
|---|---|---|---|---|---|
| | CT-W650R | CT-W550R | CT-W550R-S | | |
| KUC | ○ | ○ | – | AC120V only | |
| HEM | ○ | ○ | – | AC220V–230V, 230V–240V (switchable) * | |
| HB | ○ | ○ | – | AC220V–230V, 230V–240V (switchable) * | |
| HPW | – | ○ | – | AC220V–230V, 230V–240V (switchable) * | |
| HEWM | – | – | ○ | AC220V–230V, 230V–240V (switchable) * | |
| SD | ○ | ○ | – | AC110V, 120V–127V, 220V, 240V (switchable) | |

*Change the primary wiring of the power transformer.

- **This manual is applicable to the CT-W650R/KUC, HEM, HB, SD, CT-W550R/KUC, HEM, HB, HPW, SD and CT-W550R-S/HEWM types.**
- **As to the CT-W650R/HEM, HB, SD, CT-W550R/KUC, HEM, HB, HPW, SD and CT-W550R-S/HEWM types, refer to page 44–48.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
**PIONEER ELECTRONICS SERVICE INC.** P.O. Box 1760, Long Beach, California 90801 U.S.A.
**PIONEER ELECTRONICS OF CANADA, INC.** 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 2740 Beveren, Belgium
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911
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# CT-W650R, CT-W550R

## CONTENTS


1. SAFETY INFORMATION ..... 2
2. EXPLODED VIEWS AND PARTS LIST ..... 3
3. SCHEMATIC DIAGRAM ..... 12
4. P.C. BOARDS CONNECTION DIAGRAM ..... 15
5. PACKING ..... 23
6. P.C.B's PARTS LIST ..... 24
7. ADJUSTMENTS ..... 28
7. RÉGLAGES ..... 32
7. AJUSTES ..... 36
8. IC DESCRIPTIONS ..... 40
9. FOR CT-W650R/HEM, HB AND SD TYPES ..... 44
10. FOR CT-W550R/KUC, HEM, HB, HPW, SD AND CT-W550R-S/HEWM TYPES ..... 45
11. SPECIFICATIONS ..... 49
12. PANEL FACILITIES ..... 50


**This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.**
**Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

WARNING
**Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).**
**When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.**

# 1. SAFETY INFORMATION

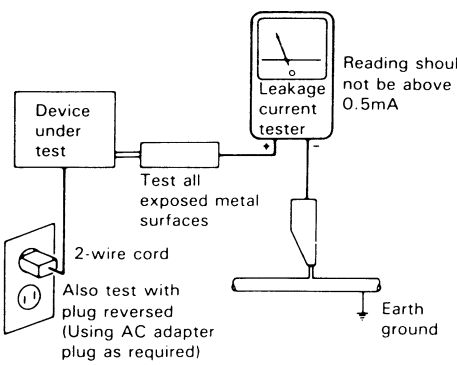
(FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

**LEAKAGE CURRENT CHECK**

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

**ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.**

### 2. PRODUCT SAFETY NOTICE

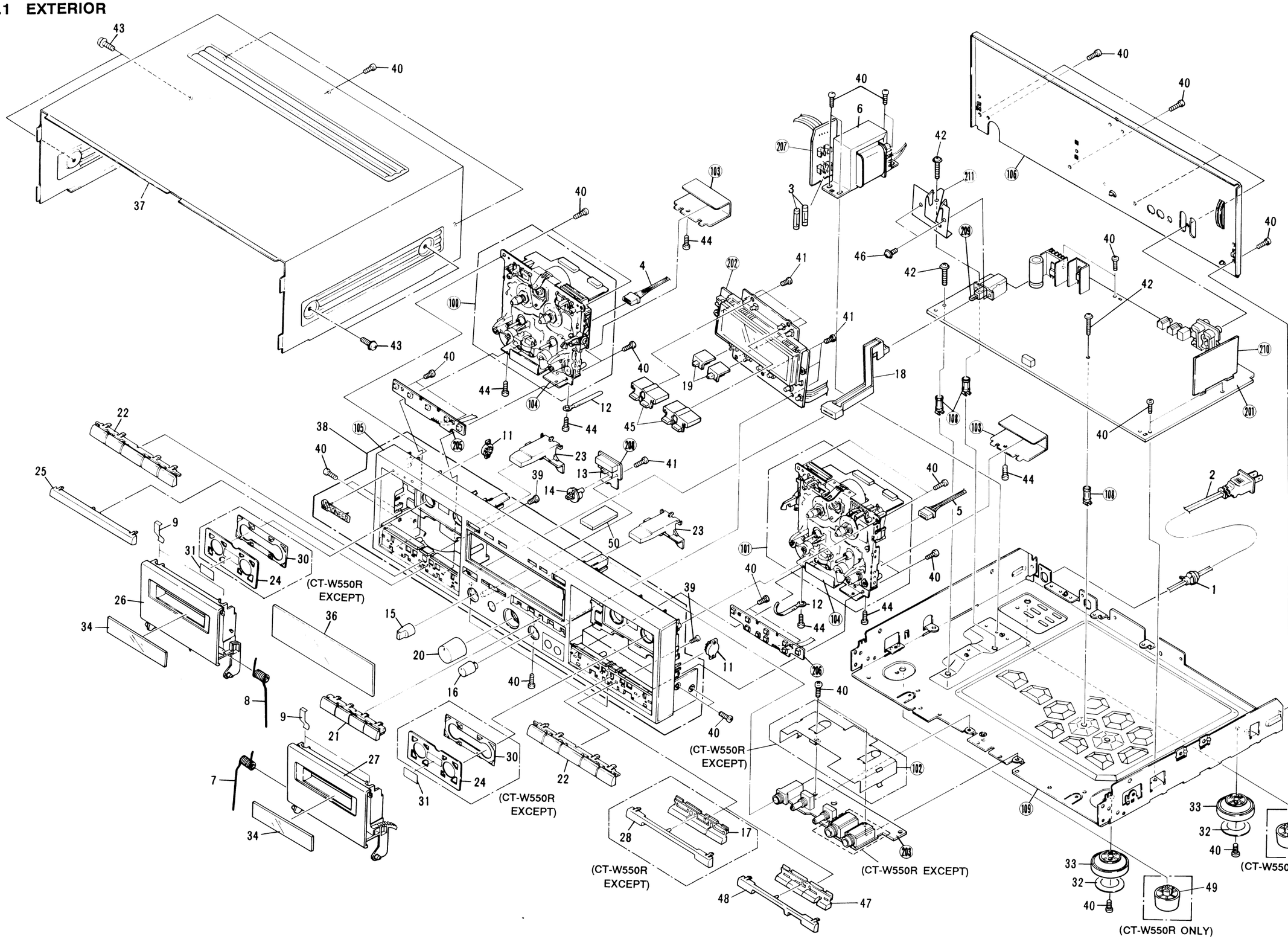
Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

# 2. EXPLODED VIEWS AND PARTS LIST

## 2.1 EXTERIOR

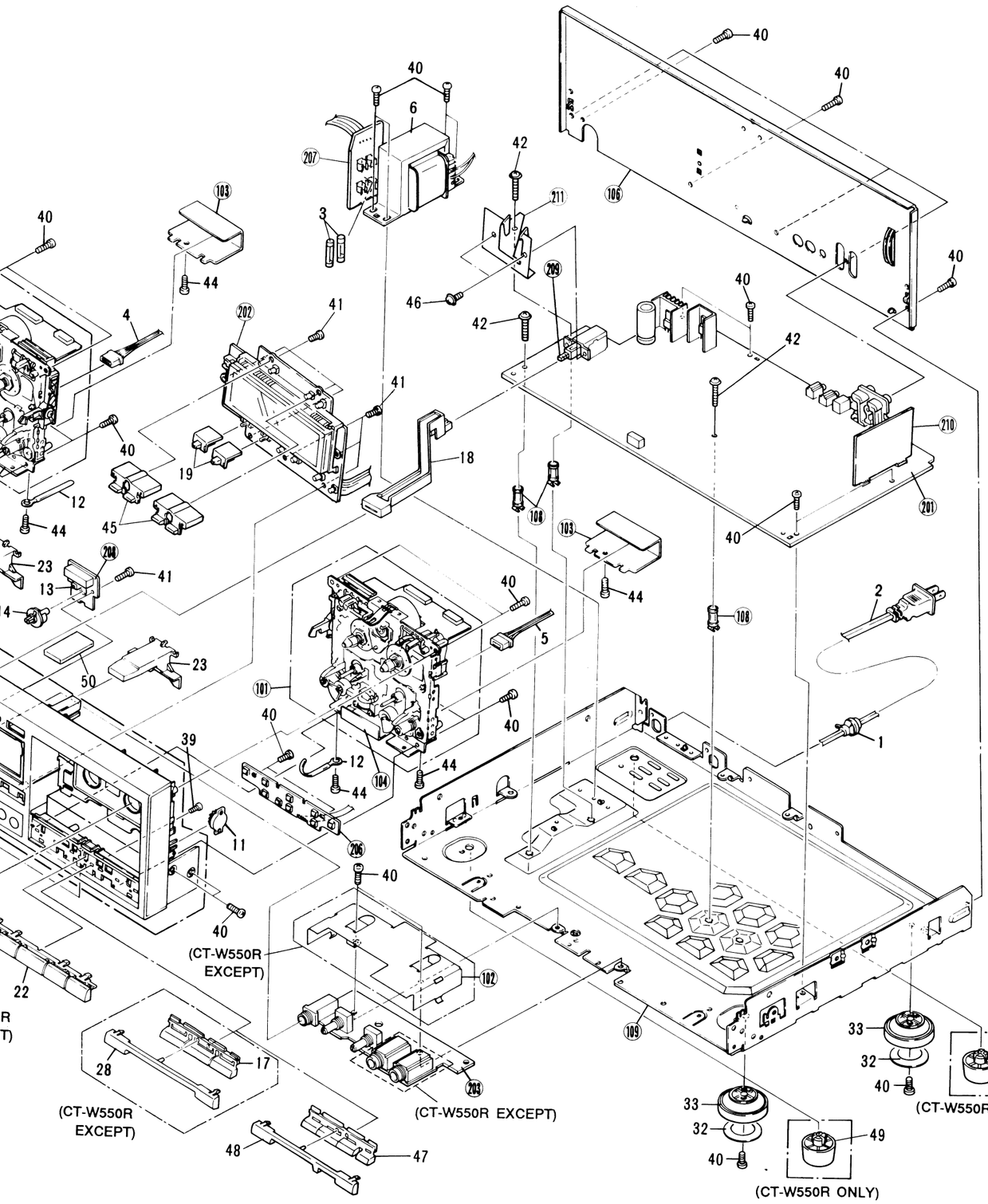



NOTES:

- Parts without pa
- The ⚠ mark fou
  to use parts of id
- Parts marked by

### Parts List of

| Mark | No. | |
|---|---|---|
| ⚠ | 1 | Str |
| ⚠ | 2 | AC |
| ⚠ | 3 | FU |
| | | Fus |
| ⚠ | 4 | Cor |
| ⚠ | 5 | Cor |
| ⚠ | 6 | Pov |
| | 7 | Doo |
| | 8 | Doo |
| | 9 | Hal |
| | 10 | ··· |
| | 11 | Dar |
| | 12 | Cor |
| | 13 | SW |
| | 14 | Rot |
| | 15 | Kn |
| | 16 | VR |
| | 17 | Ope |
| | | (Fo |
| | 18 | Pov |
| | 19 | Slic |
| | 20 | VR |
| | 21 | Ope |
| | 22 | Ope |
| | 23 | Eje |
| | 24 | Sta |
| | | (Fo |
| | 25 | REC |
| | 26 | Doo |
| | | (Fo |
| | | Doo |
| | | (Fo |
| | 27 | Doo |
| | | (Fo |
| | | Doo |
| | | (Fo |
| | 28 | REC |
| | | (Fo |
| | 29 | ··· |
| | 30 | Sta |
| | | (Fo |
| | 31 | Rer |
| | 32 | Sto |
| | | (Fo |
| | 33 | Insu |
| | | (Fo |
| | 34 | Doo |
| | 35 | ··· |




**NOTES:**

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## Parts List of Exterior

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | 1 | Strain relief | CM – 22 |
| ⚠ | 2 | AC power cord | RDG1010 |
| ⚠ | 3 | FU1801, FU1802 Fuse (1.5A) | REK1001 |
| ⚠ | 4 | Connector assembly 3P | RKP1322 |
| ⚠ | 5 | Connector assembly 6P | RKP1402 |
| ⚠ | 6 | Power transformer | RTT1165 |
| | 7 | Door spring (L) | RBH1254 |
| | 8 | Door spring (R) | RBH1255 |
| | 9 | Half pressure spring | RBK1004 |
| | 10 | ····· | |
| | 11 | Damper assembly | REC1005 |
| | 12 | Cord clamper | RNH – 184 |
| | 13 | SW cap | RNK1522 |
| | 14 | Rotary SW shaft | RNK1523 |
| | 15 | Knob (B) | RAC1414 |
| | 16 | VR knob (B) | RAC1421 |
| | 17 | Operation knob (B) (For CT – W550R) | RAC1424 |
| | 18 | Power knob | RAC1427 |
| | 19 | Slide knob | RAC1428 |
| | 20 | VR knob (A) | RAC1430 |
| | 21 | Operation knob (C) | RAC1475 |
| | 22 | Operation knob (A) | RAC1479 |
| | 23 | Eject knob | RAC1480 |
| | 24 | Stabilizer panel (For CT – W650R) | RAH1483 |
| | 25 | REC mold (L) | RAH1608 |
| | 26 | Door pocket (L) (For CT – W650R) | RAH1828 |
| | | Door pocket (L) (For CT – W550R) | RHA1831 |
| | 27 | Door pocket (R) (For CT – W650R) | RAH1829 |
| | | Door pocket (R) (For CT – W550R) | RHA1832 |
| | 28 | REC mold (For CT – W550R) | RAH1611 |
| | 29 | ····· | |
| | 30 | Stabilizer (B) (For CT – W650R) | REB1085 |
| | 31 | Remain display paper | REE – 113 |
| | 32 | Stopper (For CT – W650R) | VEC1061 |
| | 33 | Insulator (For CT – W650R) | VNK1095 |
| | 34 | Door lens | RAH1622 |
| | 35 | ····· | |
| | 36 | FL lens | RAH1830 |
| | 37 | Bonnet | RXX1396 |
| | 38 | Front panel assembly (For CT – W650R) | RXX1374 |
| | | Front panel assembly (For CT – W550R) | RXX1372 |
| | 39 | Screw | BBZ20P080FMC |
| | 40 | Screw | BBZ30P080FMC |
| | 41 | Screw | BBZ30P100FZK |
| | 42 | Screw | IBZ30P150FCU |
| | 43 | Screw | FBT40P080FZK |
| | 44 | Screw | BCZ26P050FMC |
| | 45 | Counter knob | RAC1426 |
| | 46 | Screw | PMA30P060FCU |
| | 47 | BLE knob (For CT – W650R) | RAC1601 |
| | 48 | BLE mold (For CT – W650R) | RAH1729 |
| | 49 | Leg assembly (For CT – W550R/KUC) | PXA1201 |
| | 50 | Spacer | REC1092 |
| | 100 | Mechanism unit | |
| | 101 | Mechanism unit | |
| | 102 | Shield case (For CT-W650R) | |
| | 103 | Mechanism shield plate | |
| | 104 | Mechanism bracket | |
| | 105 | Front panel | |
| | 106 | Rear panel | |
| | 107 | ····· | |
| | 108 | PCB spacer | |
| | 109 | Main chassis (FE) | |
| | 110 | ····· | |
| | 201 | Main unit | |
| | 202 | Display unit | |
| | 203 | Volume unit | |
| | 204 | ····· | |
| | 205 | Control SW (1) unit | |
| | 206 | Control SW (2) unit | |
| | 207 | Transformer 2 unit | |
| | 208 | Switch unit | |
| | 209 | Regulator unit | |
| | 210 | REC unit | |
| | 211 | SW bracket | |

## 2.2 MECHANISM UNIT (DECK I)

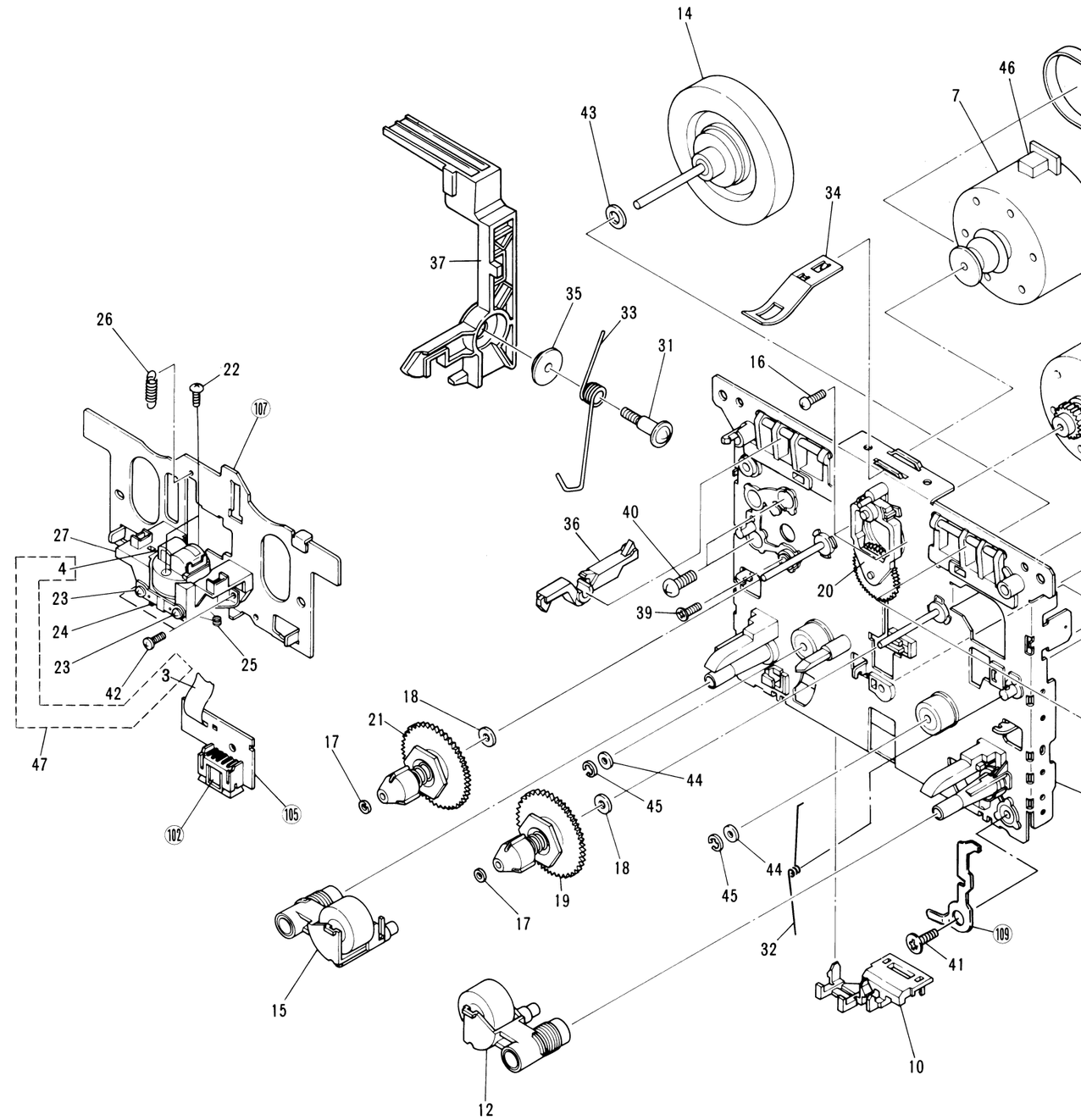
### Parts List of Mechanism Unit (Deck I)

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Shaft | RLA1130 |
| | 2 | Plunger | RLA1132 |
| | 3 | HD FPC (PB) | RNP1235 |
| | 4 | PB head | RPB1031 |
| | 5 | Push switch | RSG1018 |
| | 6 | Motor assembly | RXM1029 |
| | 7 | Motor assembly (Main) | RXM1030 |
| | 8 | Solenoid | RXP1010 |
| | 9 | Photo transistor | SPI33534FG |
| | 10 | Wire holder | RNK1530 |
| | 11 | Main belt | REB1157 |
| | 12 | Pinch roller assembly | RXA1183 |
| | 13 | Flywheel assembly | RXA1294 |
| | 14 | Flywheel assembly | RXA1295 |
| | 15 | Pinch roller assembly(L) | RXA1296 |
| | 16 | Screw | RBA1076 |
| | 17 | Washer | RBF – 057 |
| | 18 | Washer | RBF1038 |
| | 19 | TU reel assembly | RXA1184 |
| | 20 | Idler assembly | RXA1248 |
| | 21 | TU reel assembly | RXC – 040 |
| | 22 | Screw | PMZ14P050FNI |
| | 23 | Azimuth screw | RBA1080 |
| | 24 | Azimuth spring | RBK1029 |
| | 25 | Rotation spring | RBL – 085 |
| | 26 | Head base spring | RBL1003 |
| | 27 | Head housing assembly | RXA1293 |
| | 28 | Slide spring | RBH1239 |
| | 29 | Play arm | RNK1525 |
| | 30 | Cam gear | RNK1672 |
| | 31 | Screw | RBA1078 |
| | 32 | Eject prevention spring (R) | RBH1230 |
| | 33 | Eject lever spring (R) | RBH1264 |
| | 34 | Cassette hold spring | RBK1030 |
| | 35 | Lever collar (B) | RLA1146 |
| | 36 | REC detection lever | RNK1527 |
| | 37 | Eject lever (R) | RNK1594 |
| | 38 | PACK detection lever(P) | RNK1543 |
| | 39 | Screw | PBZ30P080FMC |
| | 40 | Screw | PMZ26P050FMC |
| | 41 | Screw | RBA1048 |
| | 42 | Screw | RBA1077 |
| | 43 | Washer | WA26D045D025 |
| | 44 | Washer | WA26D047D050 |
| | 45 | Washer | YE15FUC |
| | 46 | Holder cushion (L) | RED1027 |
| | 47 | Head assembly (PB) | RXA1402 |
| | 100 | Tripe – conductor jumper wire | |
| | 101 | Connector (10P) | |
| | 102 | Connector (3P) | |
| | 103 | Connector (4P) | |
| | 104 | P.C. board | |
| | 105 | Head P.C.B | |
| | 106 | Chassis assembly | RXA1291 |
| | 107 | Head base | |
| | 108 | Slide plate | RNE1345 |
| | 109 | Eject prevention arm (R) | |

※ The head assembly (PB) in No. 47 is a component of Nos. 3 and 4 and can be supplied as service.







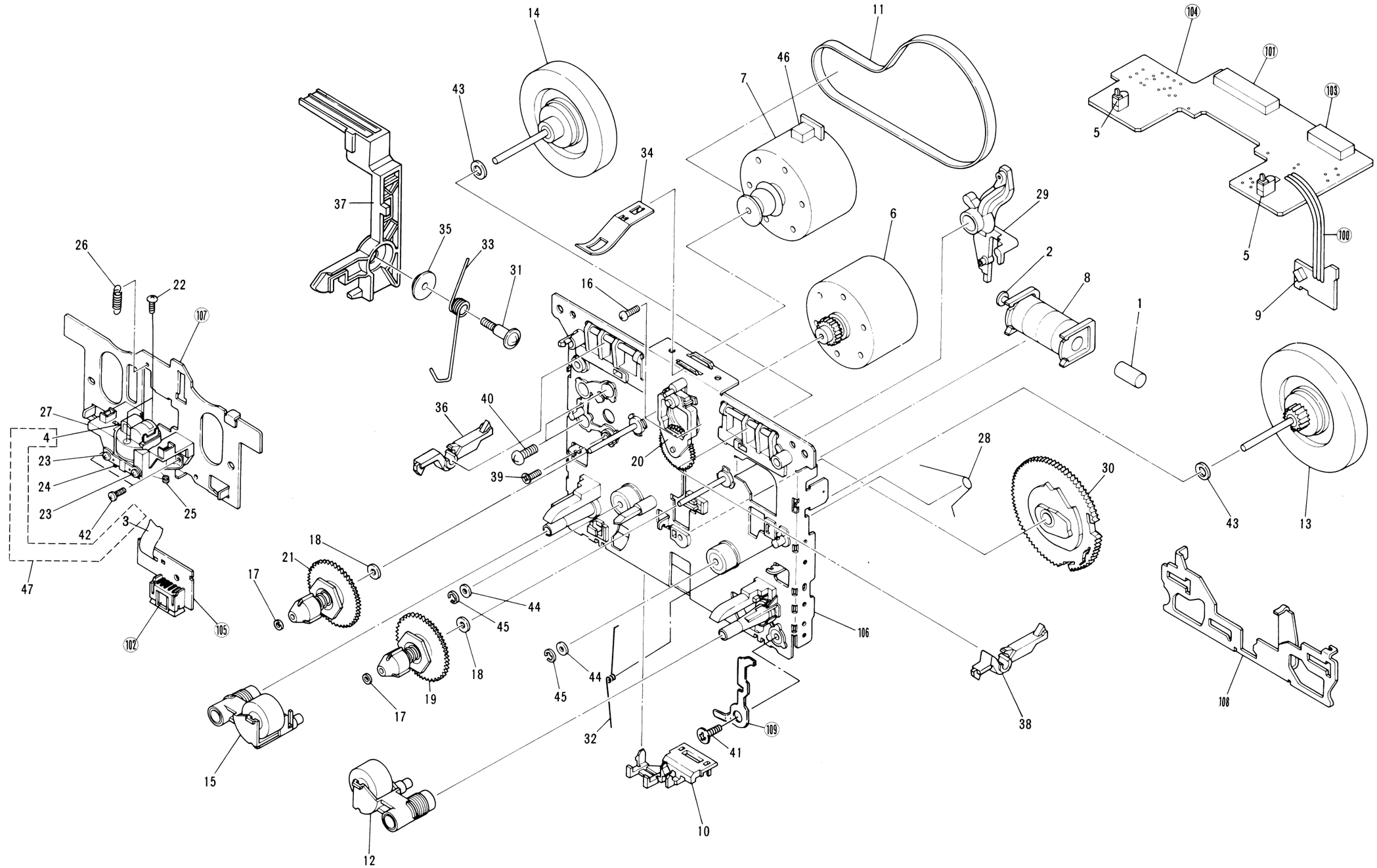
## Mechanism Unit (Deck I)

**Part No.**

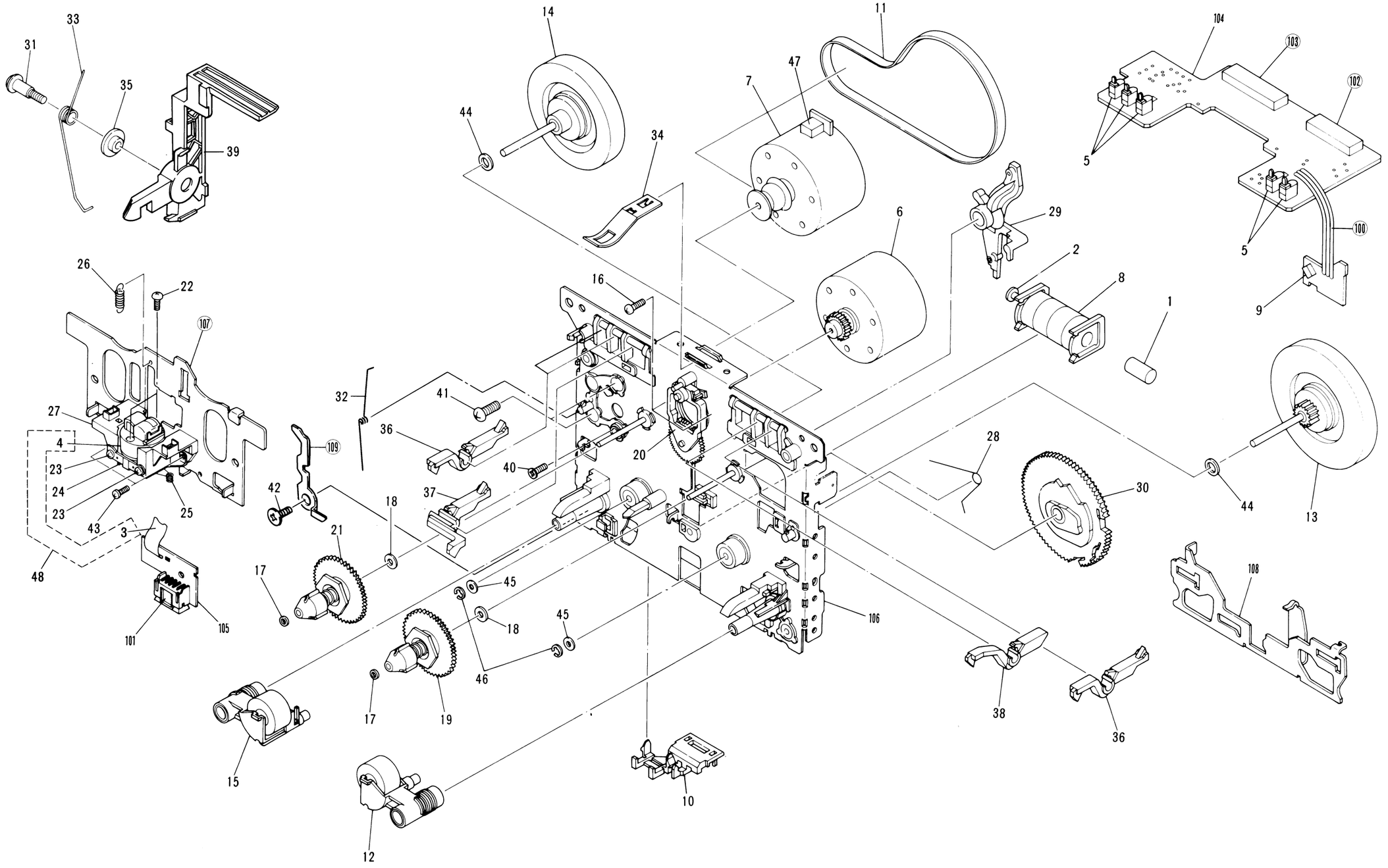
XA1291

NE1345

omponent of Nos.
ce.



## 2.2 MECHANISM UNIT (DECK II)




### Parts List

| Mark | No. |
|---|---|
| A | 1 |
| | 2 |
| | 3 |
| | 4 |
| | 5 |
| | 6 |
| | 7 |
| | 8 |
| | 9 |
| | 10 |
| | 11 |
| | 12 |
| | 13 |
| | 14 |
| | 15 |
| B | 16 |
| | 17 |
| | 18 |
| | 19 |
| | 20 |
| | 21 |
| | 22 |
| | 23 |
| | 24 |
| | 25 |
| | 26 |
| | 27 |
| | 28 |
| | 29 |
| | 30 |
| | 31 |
| C | 32 |
| | 33 |
| | 34 |
| | 35 |
| | 36 |
| | 37 |
| | 38 |
| | 39 |
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| | 42 |
| | 43 |
| | 44 |
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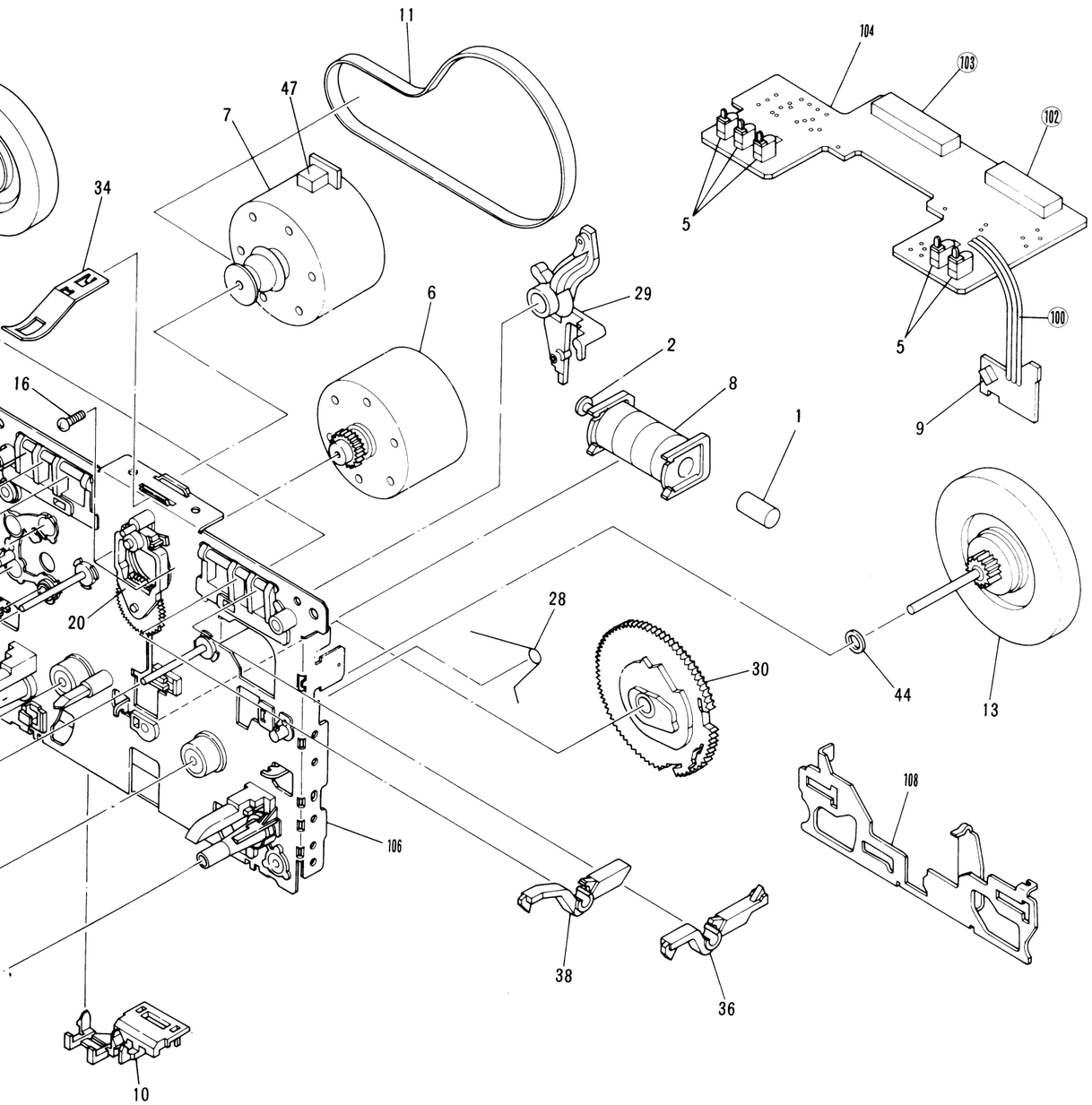
| | 46 |
| | 47 |
| D | 48 |



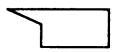

## Parts List of Mechanism Unit (Deck II)

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Shaft | RLA1130 |
| | 2 | Planger | RLA1132 |
| | 3 | HD FPC (R/P) | RNP1232 |
| | 4 | R/P, E head | RPB1030 |
| | 5 | Push switch | RSG1018 |
| | 6 | Motor assembly | RXM1029 |
| | 7 | Motor assembly (Main) | RXM1030 |
| | 8 | Solenoid | RXP1010 |
| | 9 | Photo transistor | SPI33534FG |
| | 10 | Wire holder | RNK1530 |
| | 11 | Main belt | REB1157 |
| | 12 | Pinch roller assembly | RXA1183 |
| | 13 | Flywheel assembly | RXA1294 |
| | 14 | Flywheel assembly | RXA1295 |
| | 15 | Pinch roller assembly(L) | RXA1296 |
| | 16 | Screw | RBA1076 |
| | 17 | Washer | RBF – 057 |
| | 18 | Washer | RBF1038 |
| | 19 | TU reel assembly | RXA1184 |
| | 20 | Idler assembly | RXA1248 |
| | 21 | TU reel assembly | RXC – 040 |
| | 22 | Screw | PMZ14P050FNI |
| | 23 | Azimuth screw | RBA1080 |
| | 24 | Azimuth spring | RBK1029 |
| | 25 | Rotation spring | RBL – 085 |
| | 26 | Head base spring | RBL1003 |
| | 27 | Head housing assembly | RXA1293 |
| | 28 | Slide spring | RBH1239 |
| | 29 | Play arm | RNK1525 |
| | 30 | Cam gear | RNK1672 |
| | 31 | Screw | RBA1078 |
| | 32 | Eject prevention spring (L) | RBH1234 |
| | 33 | Eject lever spring (L) | RBH1262 |
| | 34 | Cassette hold spring | RBK1030 |
| | 35 | Lever collar (B) | RLA1146 |
| | 36 | REC detection lever | RNK1527 |
| | 37 | Metal detection lever(L) | RNK1529 |
| | 38 | PACK detection lever(P) | RNK1543 |
| | 39 | Eject lever (L) | RNK1593 |
| | 40 | Screw | PBZ30P080FMC |
| | 41 | Screw | PMZ26P050FMC |
| | 42 | Screw | RBA1048 |
| | 43 | Screw | RBA1077 |
| | 44 | Washer | WA26D045D025 |
| | 45 | Washer | WA26D047D050 |
| | 46 | Washer | YE15FUC |
| | 47 | Holder cushion (L) | RED1027 |
| | 48 | Head assembly (R/P) | RXA1378 |
| | 100 | Tripe – conductor jumper wire | |
| | 101 | Connector (6P) | RKP1401 |
| | 102 | Connector (7P) | |
| | 103 | Connector (10P) | |
| | 104 | P.C. board | RNP1279 |
| | 105 | Head P.C.B (R/P) | RNP1351 |
| | 106 | Chassis assembly | RXA1291 |
| | 107 | Head base | |
| | 108 | Slide plate | RNE1345 |
| | 109 | Eject prevention arm (L) | |

※ The head assembly (R/P) in No. 48 is a component of Nos. 3 and 4 and can be supplied as service.

1. RESISTORS :
   Indicated in Ω, 1/4W, 1/6W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance.

2. CAPACITORS :
   Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF.
   Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT :
    ; DC voltage (V) at no input signal.
   ⬅mA ; DC current at no input signal.

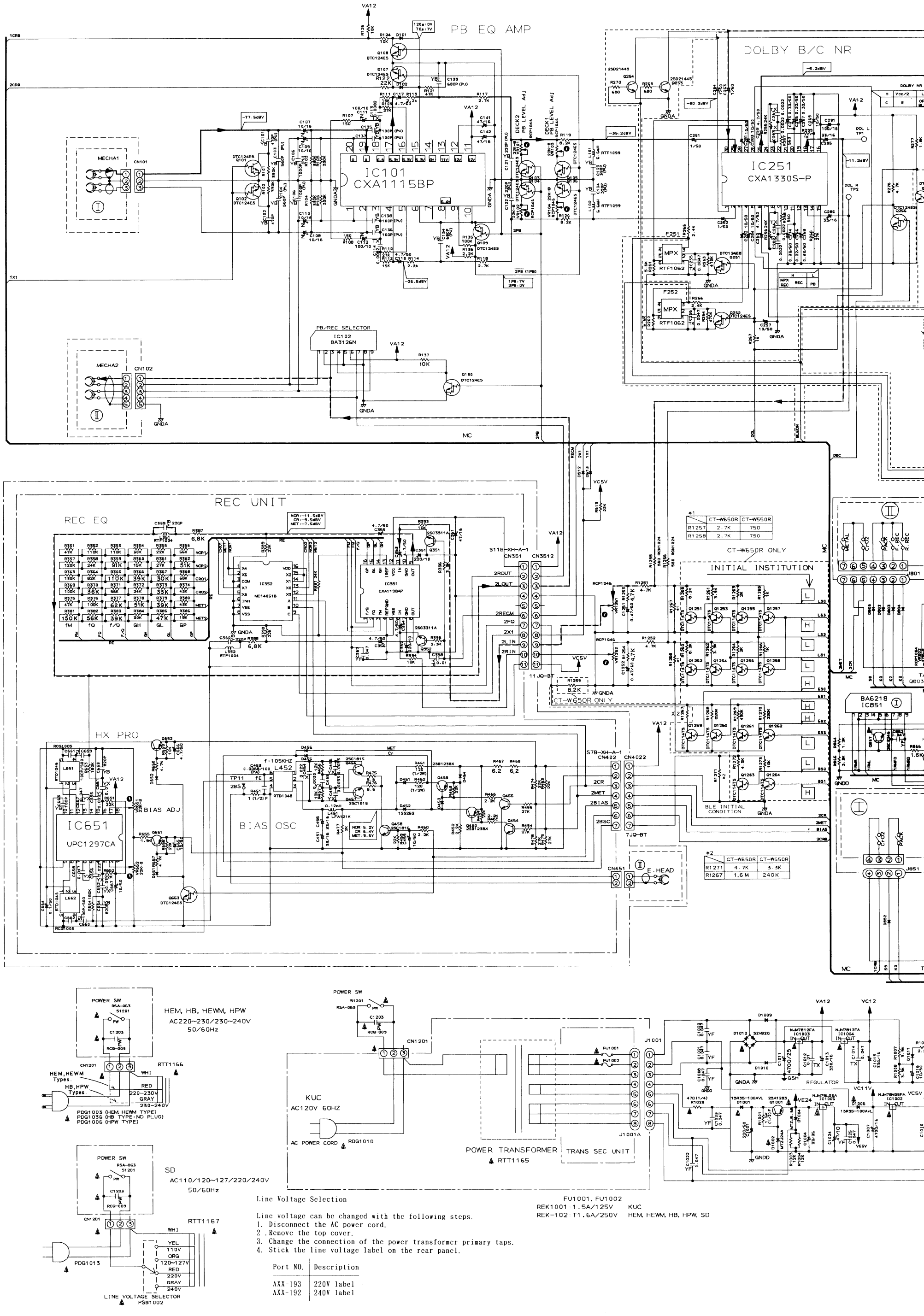
4. OTHERS :
   ➡ ; Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

   This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES (Underline indicates switch position)
   DISPLAY UNIT
   S1501 : CD CYNC
   S1503 : X2 COPY
   S1504 : X1 COPY
   S1505 : MODE 2 – COUNTER
   S1506 : RESET 2 – COUNTER
   S1507 : MODE 1 – COUNTER
   S1508 : RESET 1 – COUNTER
   S1509 : SKIP/RELY
   S1510 : REV MODE ⇄ – <u>⮌</u> – ⮎
   S1511 : TIMER REC – <u>OFF</u> – PLAY

   DLBY SW UNIT
   S1520 : B – <u>OFF</u> – C

# 3. SCHEMATIC DIAGRAM




| *1 | CT-W650R | CT-W550R |
|---|---|---|
| R1257 | 2.7K | 750 |
| R1258 | 2.7K | 750 |

| *2 | CT-W650R | CT-W550R |
|---|---|---|
| R1271 | 4.7K | 3.3K |
| R1267 | 1.6M | 240K |

Line Voltage Selection

Line voltage can be changed with the following steps.
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the power transformer primary taps.
4. Stick the line voltage label on the rear panel.

| Port NO. | Description |
|---|---|
| AXX-193 | 220V label |
| AXX-192 | 240V label |

FU1001, FU1002
REK1001 1.5A/125V KUC
REK-102 T1.6A/250V HEM, HEWM, HB, HPW, SD

INPUT BUFFER

VOLUME UNIT

MIC AMP

H.PHONE AMP

METER AMP

MAIN UNIT

MS

CT-W650R ONLY

400Hz L.P.F

400Hz LEVEL ADJ.

10kHz LEVEL ADJ.

10kHz Buffer AMP

SYSTEM CONTROL

IC501 PD4314A

TC4066BP

TC4050BP IC1701

BA15218N IC504 (1/2)

BA15218 IC1602 (1/2)

BA6218 IC851

BA6218 IC801

TAPE SPEED ADJ Q803-Q805:C.M DRIVE

C.M DRIVE

R.M DRIVE

Q806 SENS

Q801, Q802 SOL DRIVE

RESET

CD SYNC.

SR

DISPLAY UNIT

FL V1501

RAW1082 CT-W650R/KU, SD

RAW1074 CT-W650R/HEM. HB

RAW1083 CT-W550R

DOLBY SW UNIT

S1501~1509:RSG1034

S1301~1309:RSG1033

S1401~1409:RSG1033

OPERATE1 UNIT

OPERATE2 UNIT CT-W650R ONLY

CT-W550R ONLY

CT-W650R ONLY

NOTE: If the parts are not identified in the the diagram, the followings are used.

1SS254

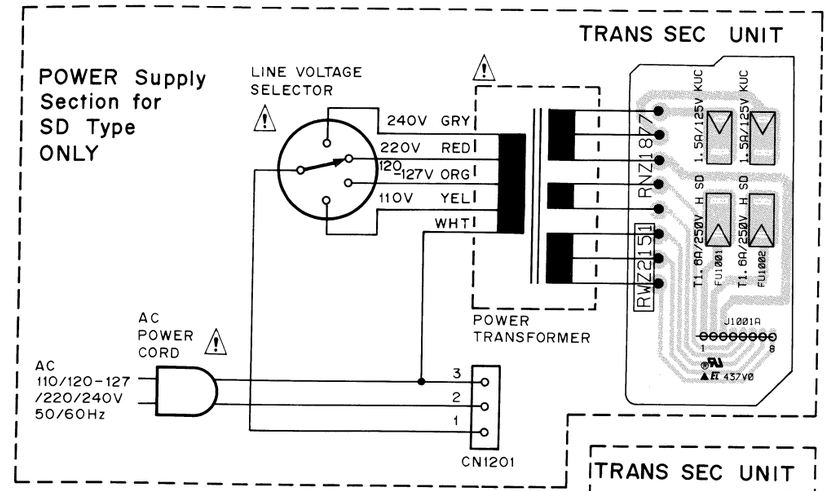
2SA1309A

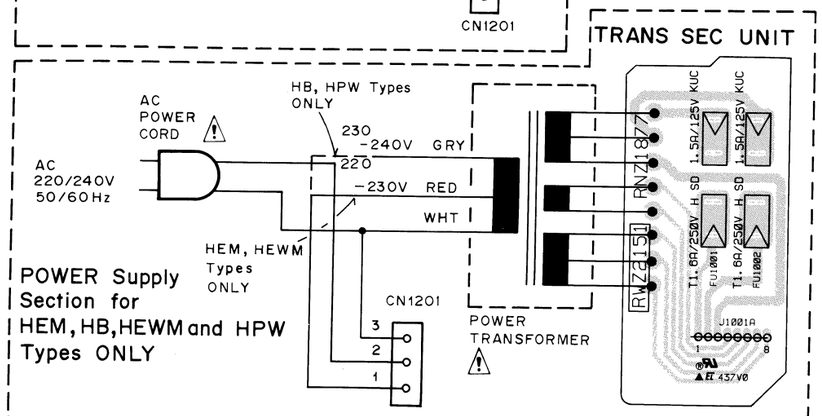
2SC3311A

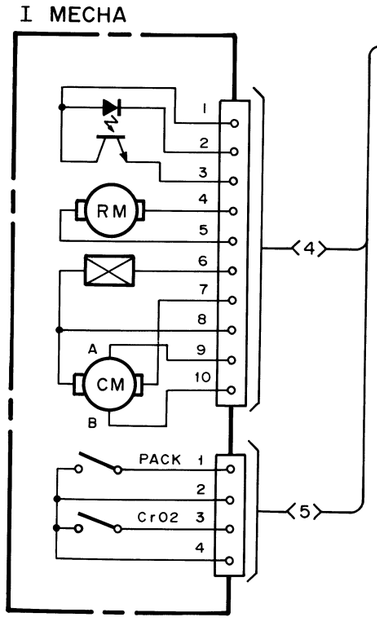
PLAYBACK SIGNAL

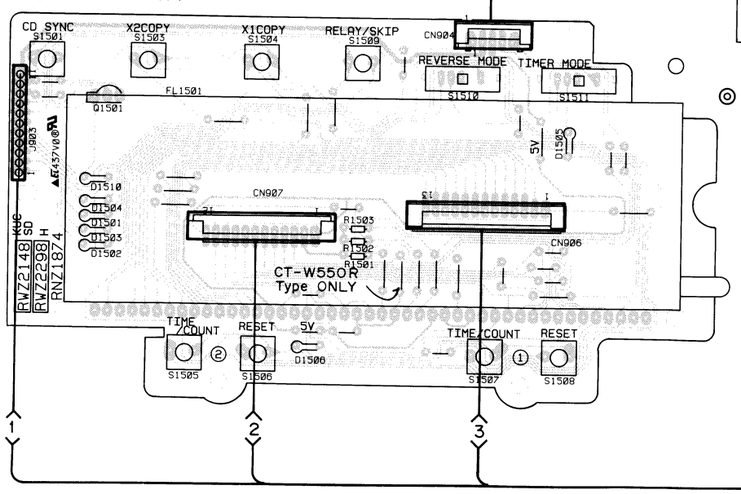
RECORDING SIGNAL

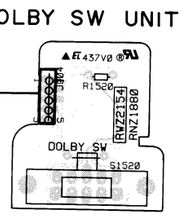
# 4. P.C. BOARDS CONNECTION DIAGRAM

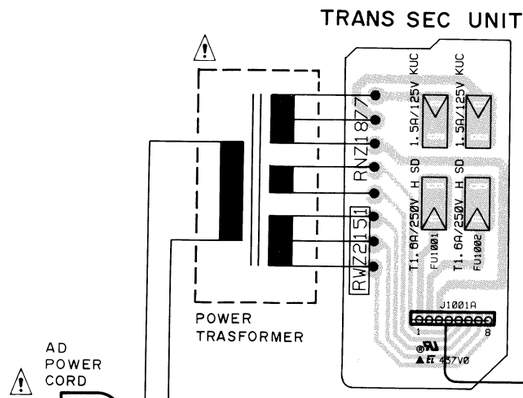


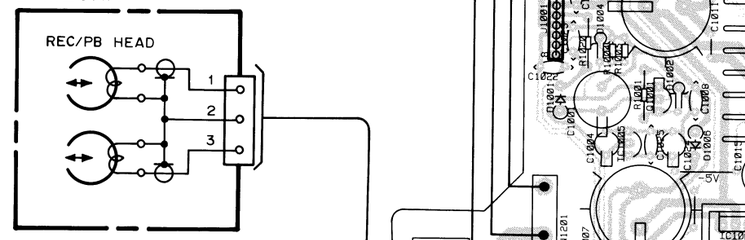



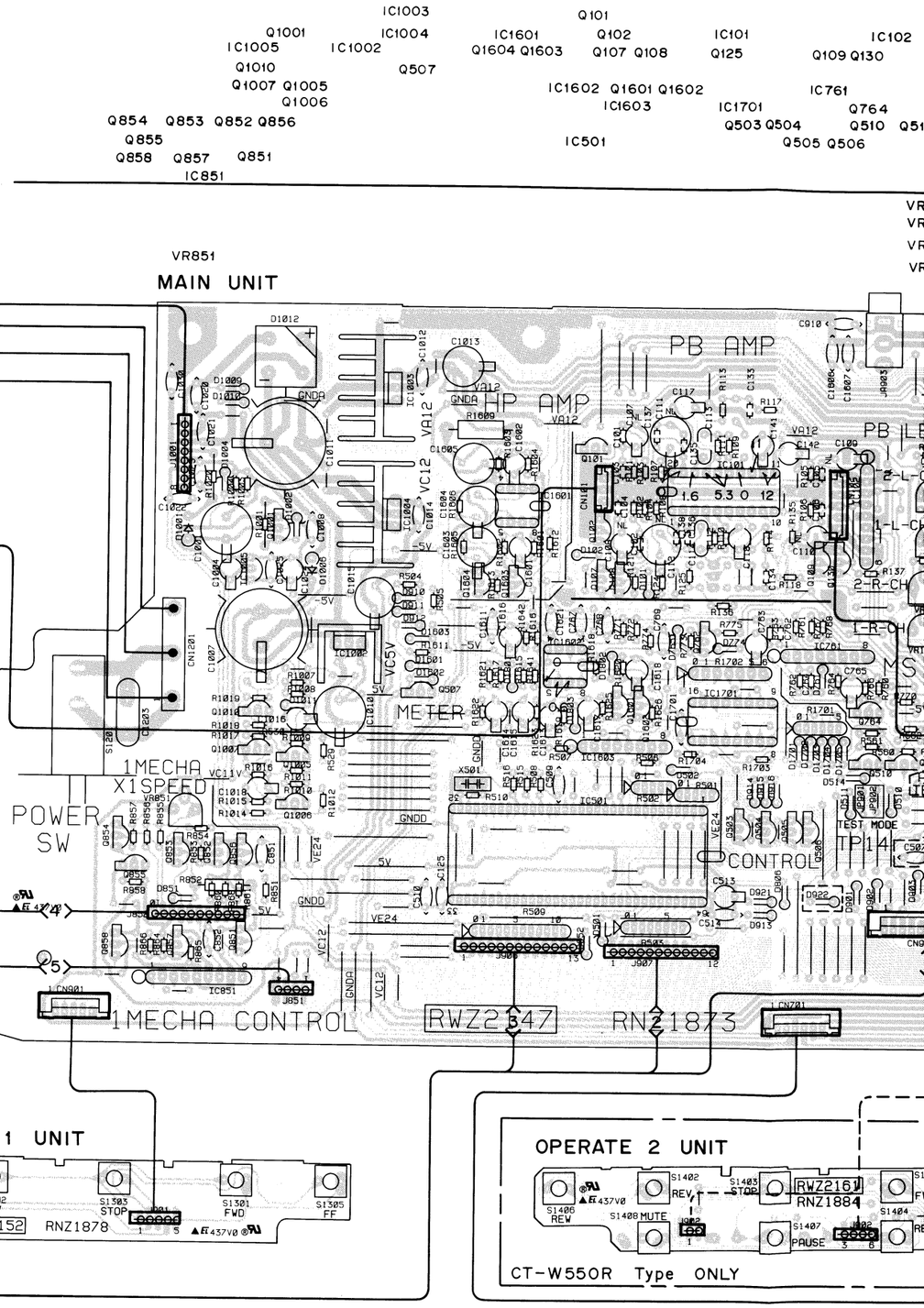



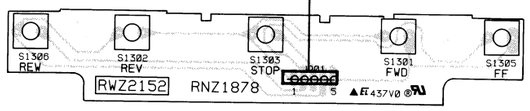



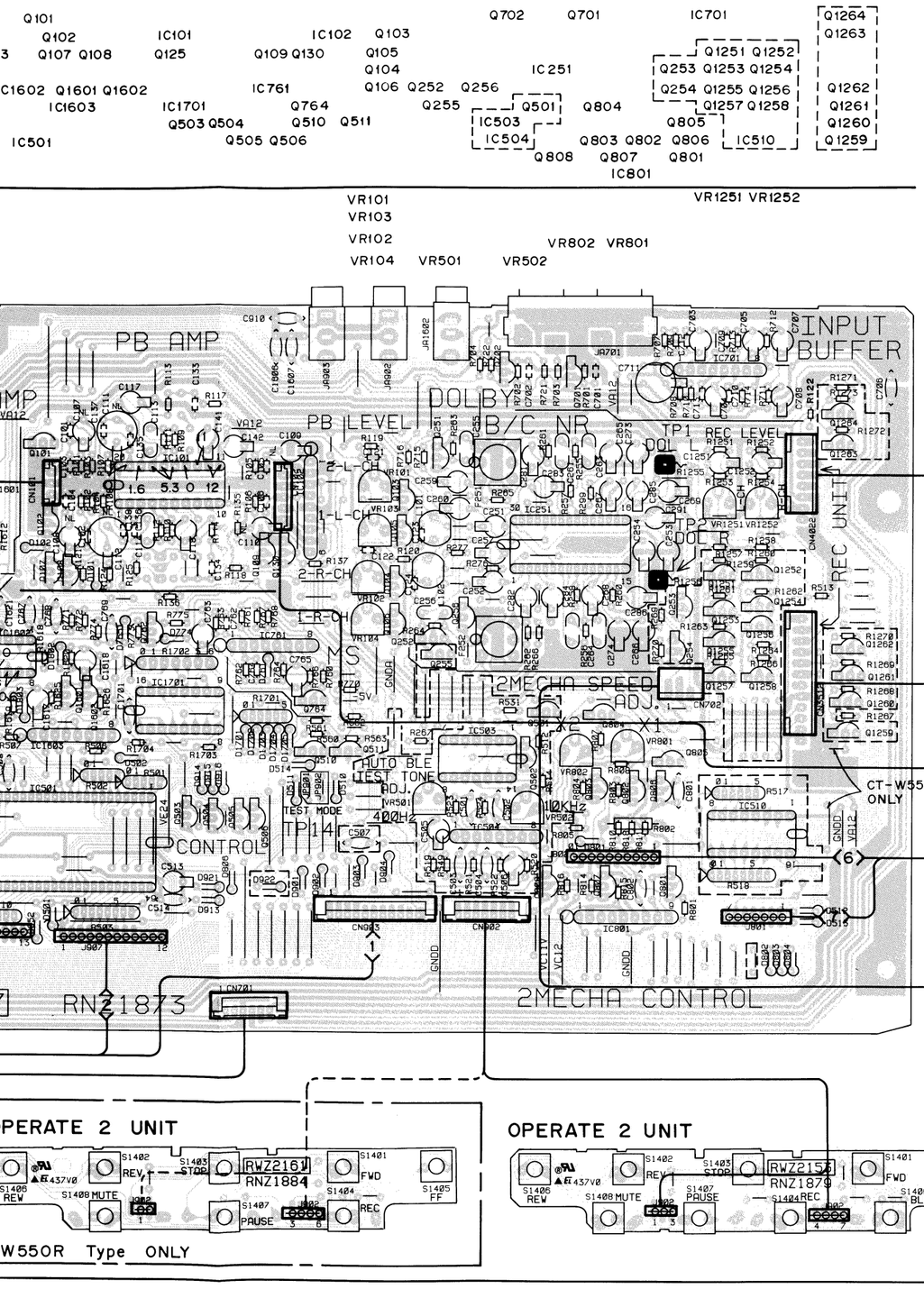



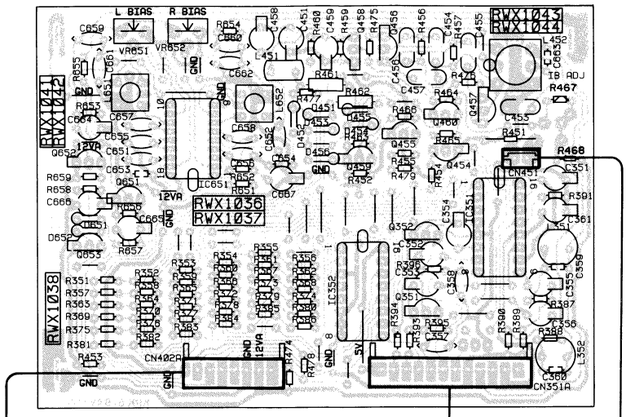



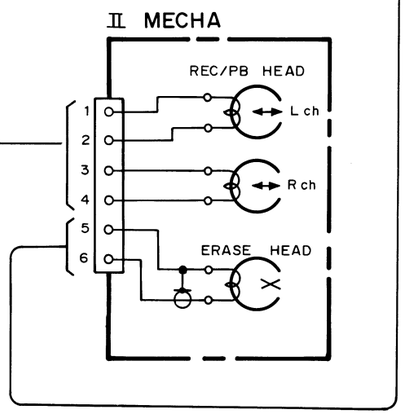





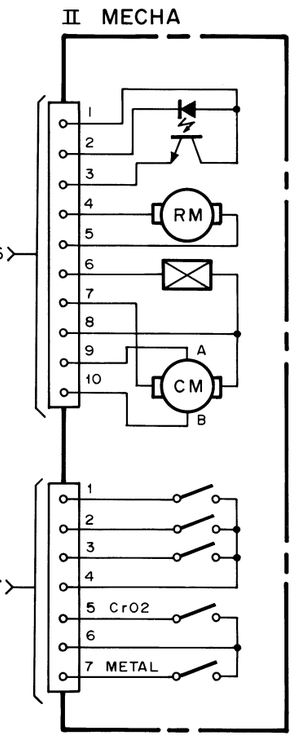

REC UNIT




II MECHA

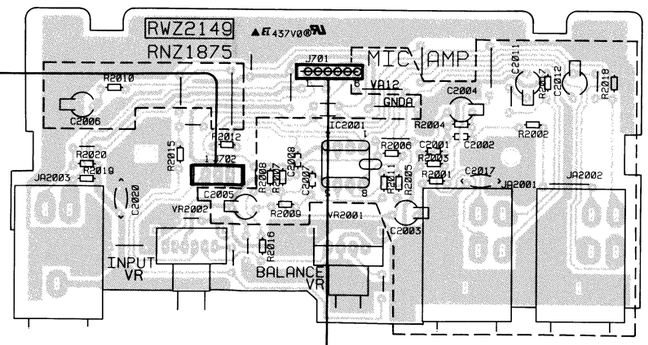



II MECHA




NOTE
[ ]; CT-W650R Type ONLY

VOLUME UNIT

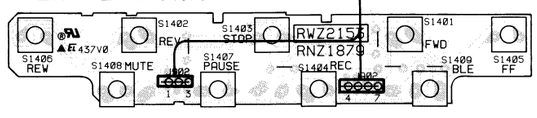



OPERATE 2 UNIT



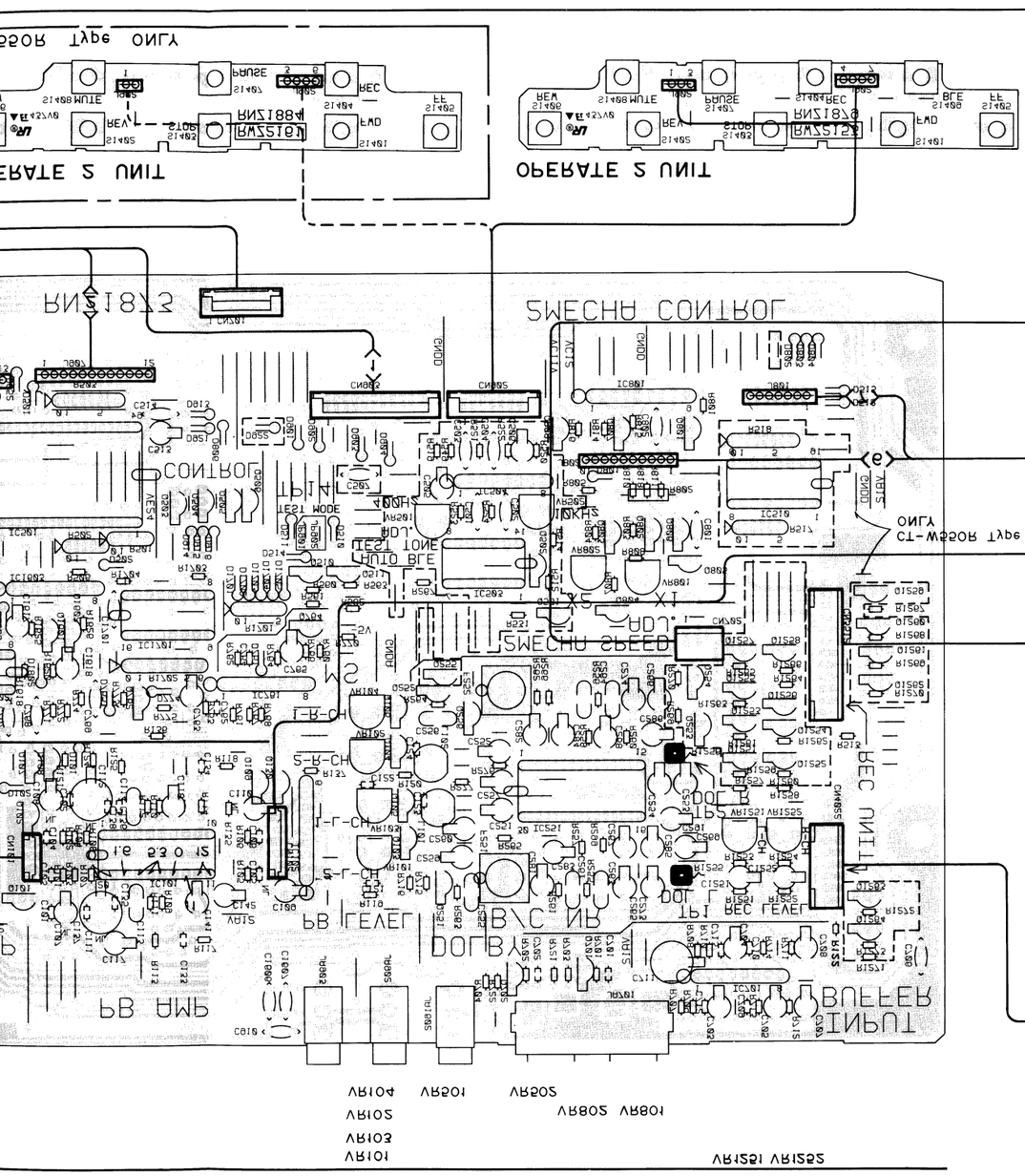

W550R Type ONLY

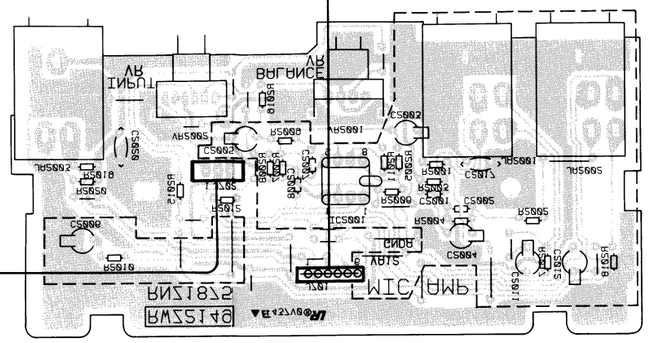
OPERATE 2 UNIT

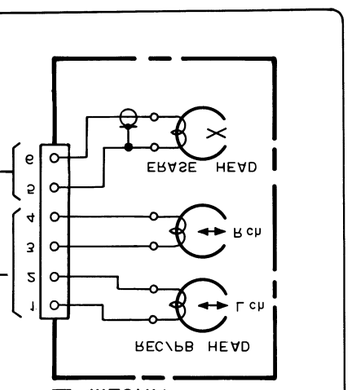


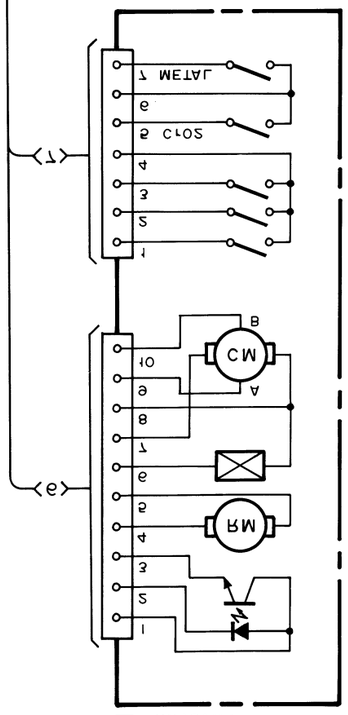

| P.C.B. pattern diagram indication | Corresponding part symbol | Part name |
|---|---|---|
| | | Transistor |
| | | FET |
| | | Diode |
| | | Zenner diode |
| | | LED |
| | | Varactor |
| | | Tact switch |
| | | Inductor |
| | | Coil |
| | | Transformer |
| | | Filter |
| | | Ceramic capacitor |
| | | Mylar capacitor |
| | | Styrol capacitor |
| | | Electrolytic capacitor (Non polarized) |
| | | Electrolytic capacitor (Noiseless) |
| | | Electrolytic capacitor (Polarized) |
| | | Electrolytic capacitor (Polarized) |
| | | Power capacitor |
| | | Semi-fixed resistor |
| | | Resistor array |
| | | Resistor |
| | | Resonator |
| | | Thermistor |

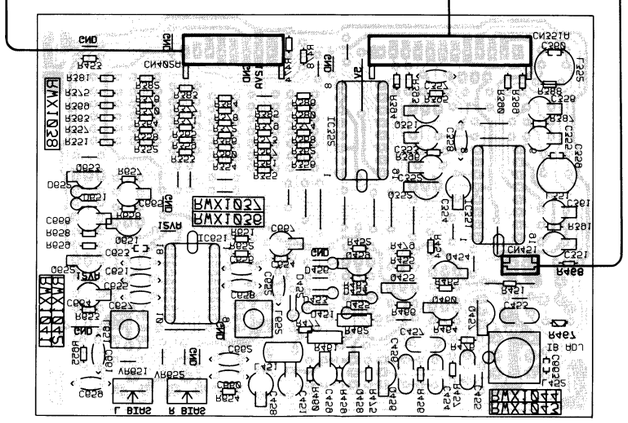
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

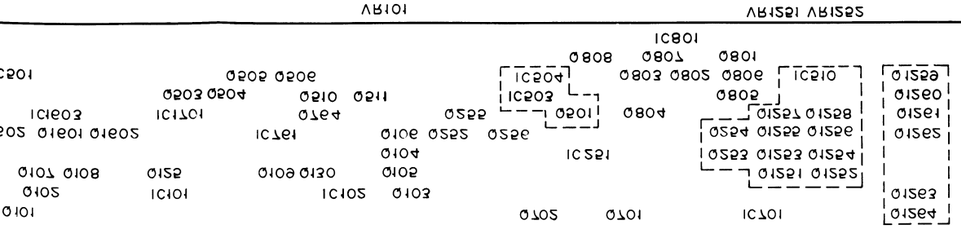


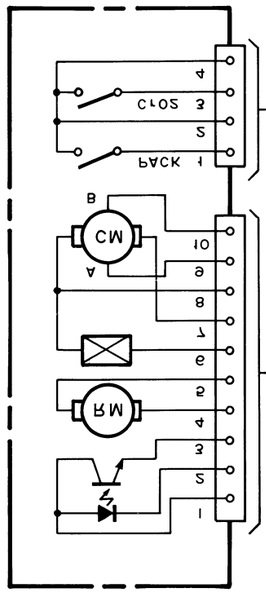



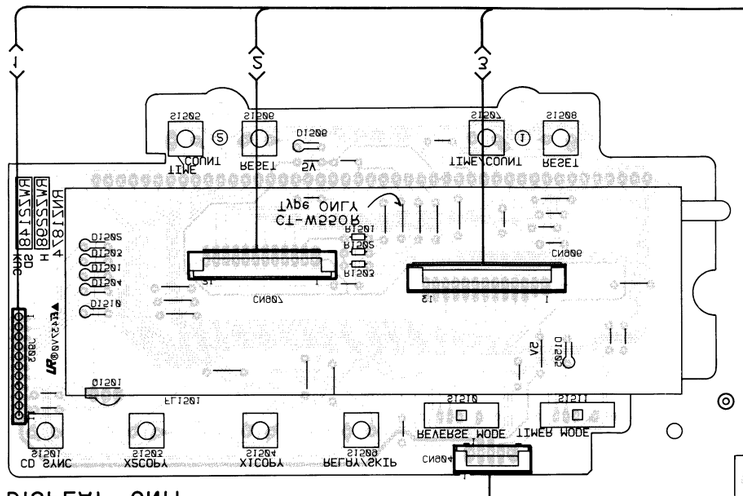



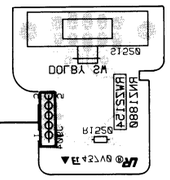



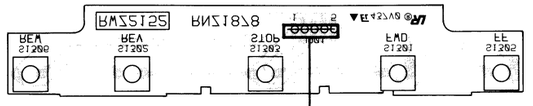
• View from soldering side

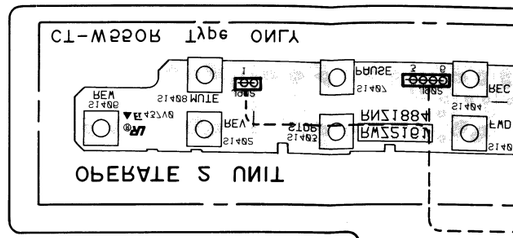
# 4. P.C. BOARDS CONNECTION DIAGRAM

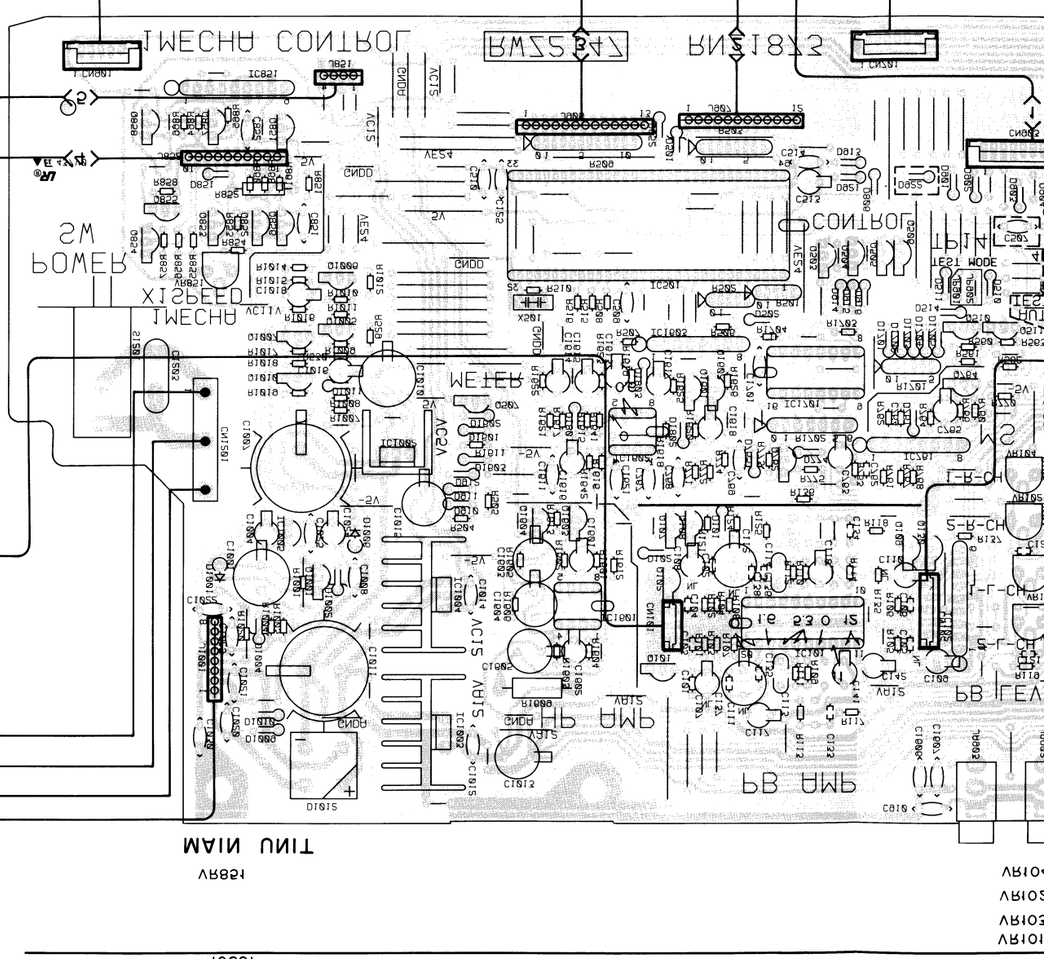


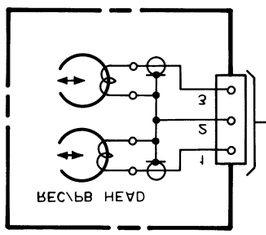



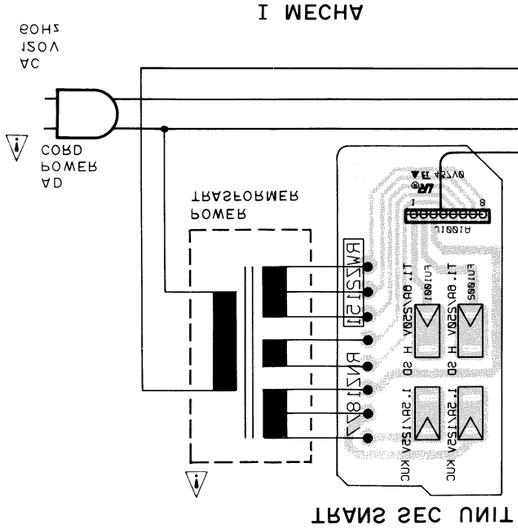



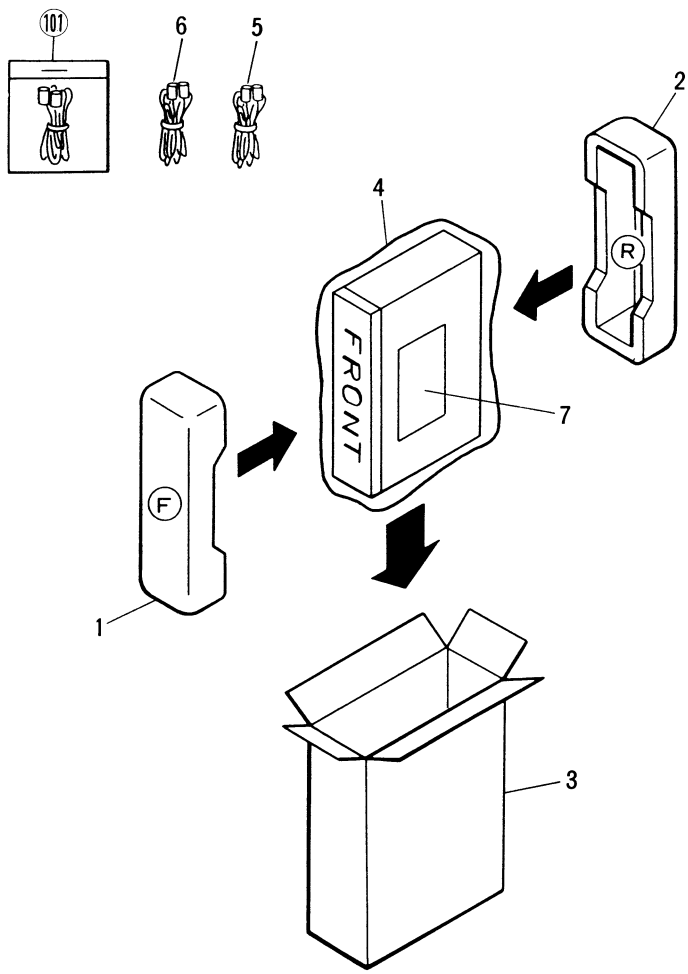



# 5. PACKING

## Parts List

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Pad (A) | RHA1023 |
| | 2 | Pad (B) | RHA1024 |
| | 3 | Packing case | RHG1293 |
| | 4 | Sheet | RHX – 034 |
| | 5 | Connection cord (Mini) | PDE – 319 |
| | 6 | Control cord | RDE1030 |
| | 7 | Operating instructions (English) | RRB1091 |
| | 101 | Connection cord assembly | |



# 6. P.C.B's PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%)

560 Ω → 56 × $10^1$ → 561 ····· RD1/4PS 5 6 1 J
47k Ω → 47 × $10^3$ → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × $10^1$ → 5621 ····· RN1/4SR 5 6 2 1 F

| Mark | No. | Description | Part No. |
|---|---|---|---|
| **REC UNIT** | | | |
| **SEMICONDUCTORS** | | | |
| | IC351 | REC EQUALIZER IC | CXA1198AP |
| | IC352 | LOGIC IC | MC14051B |
| | IC651 | DOLBY HX PRO IC | UPC1297CA |
| | Q351, 352 | TRANSISTOR | 2SC3311A |
| | Q454, 455 | TRANSISTOR | 2SC3311A |
| | Q456-458 | TRANSISTOR | 2SC1815 |
| | Q459, 460 | TRANSISTOR | 2SB1238X |
| | Q651, 652 | TRANSISTOR | 2SA1309A |
| | Q653 | TRANSISTOR | DTC124ES |
| | D451 | DIODE | 1SS254 |
| | D452 | DIODE | 1SS252 |
| | D453-456 | DIODE | 1SS254 |
| | D651, 652 | DIODE | 1SS254 |
| **COILS/TRANSFORMERS** | | | |
| | L351, 352 | COIL | RTF1004 |
| | L451 | RADIAL INDUCTOR | LFA121K |
| | L452 | | RTD1048 |
| | L651, 652 | COIL | RTD1046 |
| **CAPACITORS** | | | |
| | C351, 352 | ELECTR. CAPACITOR | CEAS221M10 |
| | C353-356 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C357 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C358 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C359, 360 | AXIAL CAPACITOR | CKPUYB221K50 |
| | C361 | ELECTR. CAPACITOR | CEAS470M16 |
| | C451 | ELECTR. CAPACITOR | CEAS330M16 |
| | C453 | CAPACITOR | CQPA682J100 |
| | C454 | AUDIO FILM CAPACITOR | CFTXA223J50 |
| | C455-457 | CERAMIC CAPACITOR | CGCYX332K25 |
| | C458 | ELECTR. CAPACITOR | CEAS330M16 |
| | C459 | ELECTR. CAPACITOR | CEAS100M50 |
| | C651, 652 | CERAMIC CAPACITOR | CGCYX103K25 |
| | C653, 654 | AXIAL CAPACITOR | CKPUYB821K50 |
| | C655, 656 | CERAMIC CAPACITOR | CGCYX223K25 |
| | C657, 658 | CERAMIC CAPACITOR | CGCYX473K25 |
| | C659, 660 | CERAMIC CAPACITOR | CCCSL101K500 |
| | C661, 662 | CERAMIC CAPACITOR | RCG1005 |
| | C663 | AXIAL CAPACITOR | CKPUYB101K50 |
| | C664 | ELECTR. CAPACITOR | CEASR10M50 |
| | C665 | ELECTR. CAPACITOR | CEAS100M50 |
| | C666 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C667 | ELECTR. CAPACITOR | CEAS100M50 |
| **RESISTORS** | | | |
| | R351-391 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R393-396 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R451 | CARBONFILM RESISTOR | RD1/2LF□□□J |
| | R452-457 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R459, 460 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R461, 462 | CARBONFILM RESISTOR | RD1/2LF□□□J |
| | R463-468 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R474-479 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R651-659 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | VR651, 652 | VR | VRTB6HS223 |
| **OTHERS** | | | |
| | CN351 | | S11B-XH-A-1 |
| | CN402 | | S7B-XH-A-1 |
| **MAIN UNIT** | | | |
| **SEMICONDUCTORS** | | | |
| | IC101 | PB-EQ AMP IC | CXA1115BP |
| | IC102 | IC | BA3126N |
| | IC251 | DOLBY B/C IC | CXA1330S |
| | IC501 | MCU | PD4314A |
| | IC503 | LOGIC IC | TC4066BP |
| | IC504 | IC | BA15218N |
| | IC510 | LOGIC IC | BU2040 |
| | IC701 | IC | BA15218N |
| | IC761 | IC | BA15218N |
| | IC801 | IC | BA6218 |
| | IC851 | IC | BA6218 |
| ⚠ | IC1002 | REGULATOR IC | NJM78M05FA |
| ⚠ | IC1003, 1004 | REGULATOR IC | NJM7812FA |
| ⚠ | IC1005 | REGULATOR IC | NJM79L05A |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC1601, 1602 | OP-AMP IC | BA15218 |
| | IC1603 | DUAL-COMPARATOR IC | M5233L |
| | IC1701 | CMOS LOGIC IC | TC4050BP |
| | Q101-109 | TRANSISTOR | DTC124ES |
| | Q130 | TRANSISTOR | DTC124ES |
| | Q251, 252 | TRANSISTOR | DTC124ES |
| | Q253, 254 | TRANSISTOR | 2SD2144S |
| | Q255 | DIGITAL TRANSISTOR | DTC114TS |
| | Q256 | TRANSISTOR | DTC124ES |
| | Q501 | TRANSISTOR | DTA124ES |
| | Q502-507 | TRANSISTOR | DTC124ES |
| | Q510, 511 | TRANSISTOR | 2SA1309A |
| | Q701, 702 | TRANSISTOR | 2SD2144S |
| | Q762 | DIGITAL TRANSISTOR | DTA114TS |
| | Q764 | TRANSISTOR | DTC124ES |
| | Q801-803 | TRANSISTOR | 2SD1858X |
| | Q804 | DIGITAL TRANSISTOR | DTA115TS |
| | Q805 | DIGITAL TRANSISTOR | DTC114TS |
| | Q806 | TRANSISTOR | 2SC3311A |
| ⚠ | Q807 | TRANSISTOR | 2SC3246 |
| | Q808 | DIGITAL TRANSISTOR | DTC114TS |
| | Q851-853 | TRANSISTOR | 2SD1858X |
| | Q854 | DIGITAL TRANSISTOR | DTA115TS |
| | Q855 | DIGITAL TRANSISTOR | DTC114TS |
| | Q856 | TRANSISTOR | 2SC3311A |
| ⚠ | Q857 | TRANSISTOR | 2SC3246 |
| | Q858 | DIGITAL TRANSISTOR | DTC114TS |
| | Q1001 | TRANSISTOR | 2SA1283 |
| | Q1005 | TRANSISTOR | 2SA1309A |
| | Q1006, 1007 | TRANSISTOR | 2SC3311A |
| | Q1010 | TRANSISTOR | 2SA1309A |
| | Q1251-1264 | DIGITAL TRANSISTOR | DTC114TS |
| | Q1601, 1602 | DIGITAL TRANSISTOR | DTC114TS |
| | Q1603, 1604 | TRANSISTOR | 2SD2144S |
| | D101, 102 | DIODE | 1SS254 |
| | D501 | ZENER DIODE | MTZJ9.1A |
| | D502 | DIODE | 1SS254 |
| | D510-514 | DIODE | 1SS254 |
| | D761 | DIODE | 1SS254 |
| | D765 | ZENER DIODE | MTZJ3.9B |
| | D774 | DIODE | 1SS254 |
| | D801 | DIODE | 1SS252 |
| | D802-804 | DIODE | 1SS254 |
| | D806 | DIODE | 1SS254 |
| | D851 | DIODE | 1SS252 |
| | D852 | DIODE | 1SS254 |
| | D901-904 | DIODE | 1SS254 |
| | D910-916 | DIODE | 1SS254 |
| | D921, 922 | DIODE | 1SS254 |
| ⚠ | D1001 | DIODE | 1SR35-100AVL |
| ⚠ | D1002 | ZENER DIODE | MTZJ24A/B |
| | D1004 | ZENER DIODE | MTZJ5.6B |
| ⚠ | D1006 | DIODE | 1SR35-100AVL |
| | D1009-1011 | DIODE | 1SS254 |
| ⚠ | D1012 | | S2VB20 |
| | D1601-1603 | DIODE | 1SS254 |
| | D1701-1705 | DIODE | 1SS254 |
| | D1801-1803 | DIODE | 1SS254 |
| **SWITCHES** | | | |
| ⚠ | S1201 | SWITCH | RSA-063 |
| **COILS/TRANSFORMERS** | | | |
| | L101, 102 | COIL | RTF1099 |
| | F251, 252 | FILTER | RTF1062 |
| **CAPACITORS** | | | |
| | C101, 102 | AXIAL CAPACITOR | CKPUYB471K50 |
| | C103, 104 | AXIAL CAPACITOR | CKPUYB561K50 |
| | C105, 106 | CERAMIC CAPACITOR | CKPUYB102K50 |
| | C107-110 | ELECTR. CAPACITOR | CEANL100M16 |
| | C111, 112 | ELECTR. CAPACITOR | CEANL101M10 |
| | C113, 114 | AUDIO FILM CAPACITOR | CFTXA822J50 |
| | C117, 118 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C121, 122 | AXIAL CAPACITOR | CKPUYB221K50 |
| | C123, 124 | AXIAL CAPACITOR | CKPUYB391K50 |
| | C125 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C133, 134 | AXIAL CAPACITOR | CKPUYB681K50 |
| | C135-138 | AXIAL CAPACITOR | CKPUYB101K50 |
| | C141, 142 | ELECTR. CAPACITOR | CEAS470M16 |
| | C251-254 | ELECTR. CAPACITOR | CEAS010M50 |
| | C255, 256 | AUDIO FILM CAPACITOR | CFTXA472J50 |
| | C257 | ELECTR. CAPACITOR | CEAS100M50 |
| | C259, 260 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C261-264 | AUDIO FILM CAPACITOR | CFTXA222J50 |
| | C265, 266 | ELECTR. CAPACITOR | CEASR22M50 |
| | C267, 268 | ELECTR. CAPACITOR | CEASR33M50 |
| | C269 | ELECTR. CAPACITOR | CEAS100M50 |
| | C273, 274 | ELECTR. CAPACITOR | CEASR33M50 |
| | C281-284 | ELECTR. CAPACITOR | CEAS100M50 |
| | C285, 286 | ELECTR. CAPACITOR | CEAS330M16 |
| | C291 | ELECTR. CAPACITOR | CEAS101M16 |
| | C501 | CERAMIC CAPACITOR | CGCYX223K25 |
| | C502 | CERAMIC CAPACITOR | CGCYX222K25 |
| | C503 | CERAMIC CAPACITOR | CGCYX104K25 |
| | C504 | CERAMIC CAPACITOR | CGCYX103K25 |
| | C505, 506 | ELECTR. CAPACITOR | CEAS010M50 |
| | C507 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C509, 510 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C513 | ELECTR. CAPACITOR | CEAS470M16 |
| | C514 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C701, 702 | AXIAL CAPACITOR | CKPUYB101K50 |
| | C703, 704 | ELECTR. CAPACITOR | CEAS010M50 |
| | C705 | ELECTR. CAPACITOR | CEAS470M16 |
| | C706 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C707, 708 | ELECTR. CAPACITOR | CEAS100M50 |
| | C709, 710 | AXIAL CAPACITOR | CKPUYB101K50 |
| | C711 | ELECTR. CAPACITOR | CEAS470M16 |
| | C712, 713 | AXIAL CAPACITOR | CKPUYB101K50 |
| | C762 | AXIAL CAPACITOR | CKPUYB101K50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C763 | ELECTR. CAPACITOR | CEASR47M50 |
| | C764 | AXIAL CAPACITOR | CKPUYB271K50 |
| | C765 | ELECTR. CAPACITOR | CEASR22M50 |
| | C767, 768 | CERAMIC CAPACITOR | CGCYX822K25 |
| | C769 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C801 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C802 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C851 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C852 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C910 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C1001 | ELECTR. CAPACITOR | CEAS221M50 |
| | C1004 | ELECTR. CAPACITOR | CEAS330M35 |
| | C1007 | ELECTR. CAPACITOR | CEAS472M16 |
| | C1008 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1010 | ELECTR. CAPACITOR | CEAS102M10 |
| | C1011 | ELECTR. CAPACITOR | CEAS472M25 |
| | C1012 | CERAMIC CAPACITOR | CFTXA103J50 |
| | C1013 | ELECTR. CAPACITOR | CEAS331M16 |
| | C1014 | AUDIO FILM CAPACITOR | CFTXA473J50 |
| | C1015 | ELECTR. CAPACITOR | CEAS331M16 |
| | C1016 | ELECTR. CAPACITOR | CEAS100M50 |
| | C1018 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C1020-1023 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1024 | ELECTR. CAPACITOR | CEHAQ470M10 |
| | C1025 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1030 | CERAMIC CAPACITOR | CKCYF473Z50 |
| ⚠ | C1203 | CAPACITOR (CERAMIC) | RCG-009 |
| | C1251, 1252 | ELECTR. CAPACITOR | CEASR47M50 |
| | C1601, 1602 | ELECTR. CAPACITOR | CEASR22M50 |
| | C1603, 1604 | ELECTR. CAPACITOR | CEAS101M16 |
| | C1605 | ELECTR. CAPACITOR | CEAS331M16 |
| | C1606 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C1607 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1611 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1613 | ELECTR. CAPACITOR | CEAS331M10 |
| | C1614 | ELECTR. CAPACITOR | CEAS330M35 |
| | C1615, 1616 | ELECTR. CAPACITOR | CEAS100M50 |
| | C1617, 1618 | ELECTR. CAPACITOR | CEASR47M50 |
| | C1621 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1701 | CERAMIC CAPACITOR | CKCYF473Z50 |

## RESISTORS

| | | | |
|---|---|---|---|
| | R101-114 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R117-121 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R122, 124, 125 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R135-137 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R255-258 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R260-267 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R269, 270 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R276, 277 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R299 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R501, 502 | RESISTOR ARRAY (10K) | RA4T□□□J |
| | R503 | RESISTOR ARRAY(68K) | RA7T□□□J |
| | R504-508 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R509 | RESISTOR ARRAY (68K) | RA11T□□□J |
| | R510 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R512-516 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R517 | RESISTOR ARRAY (22K) | RA5T□□□J |
| | R518 | RESISTOR ARRAY (22K) | RA7T□□□J |
| | R519-524 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R529-531 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R549 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R560-563 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R701-704 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R707-716 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R721, 722 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R760-764 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R766-768 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R770-775 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R801 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R802 | METAL OXIDE RESISTOR | RS1LMF□□□J |
| | R803-805 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R807, 808 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R810, 811 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R814-816 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R818 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R851 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R852 | METAL OXIDE RESISTOR | RS1LMF□□□J |
| | R853-858 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R860, 861 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R864-866 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R868 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1001 | CARBONFILM RESISTOR | RD1/2LF□□□J |
| | R1003, 1004 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1007-1012 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1014-1019 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1020 | FUSLIBLE RESISTOR | RFA1/4L□□□J |
| | R1251-1254 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1257-1273 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1601-1606 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1609 | METAL OXIDE RESISTOR | RS2LMF□□□J |
| | R1611-1613 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1615-1623 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1625, 1626 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1641, 1642 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R1701 | RESISTOR ARRAY (22K) | RA5T□□□J |
| | R1702 | LADDER RESISTOR | RCX1020 |
| | R1703, 1704 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | VR101-104 | VR | RCP1046 |
| | VR501, 502 | VR | RCP1046 |
| | VR801 | VR | VRTG6VS223 |
| | VR802 | VR | RCP1054 |
| | VR851 | VR | VRTG6VS223 |
| | VR1251, 1252 | VR | RCP1046 |

## OTHERS

| | | |
|---|---|---|
| CN3512 | | 11JQ-BT |
| CN4022 | | 7JQ-BT |
| JA701 | JACK | RKB-020 |
| JA902, 903 | JACK | RKN1004 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | JA1602 | JACK | RKN1014 |
| | X501 | CERAMIC RESONATOR | VSS1014 |

## DISPLAY UNIT

### SEMICONDUCTORS

| | | |
|---|---|---|
| | Q1501 | DIGITAL TRANSISTOR | DTA114TS |
| | D1501-1506 | DIODE | 1SS254 |
| | D1510 | DIODE | 1SS254 |

### SWITCHES

| | | |
|---|---|---|
| | S1501 | SWITCH | RSG1034 |
| | S1503-1509 | SWITCH | RSG1034 |
| | S1510, 1511 | SWITCH | RSH1014 |

### RESISTORS

| | | |
|---|---|---|
| | R1501-1503 | CARBONFILM RESISTOR | RD1/6PM□□□J |

### OTHERS

| | | |
|---|---|---|
| | CN907 | | BTMK12S-1S |
| | V1501 | FL tube | RAW1082 |

## VOLUME UNIT

### SEMICONDUCTORS

| | | |
|---|---|---|
| | IC2001 | OP-AMP IC | BA15218 |

### CAPACITORS

| | | |
|---|---|---|
| | C2001, 2002 | AXIAL CAPACITOR | CKPUYB681K50 |
| | C2003, 2004 | ELECTR. CAPACITOR | CEAS010M50 |
| | C2005, 2006 | ELECTR. CAPACITOR | CEAS100M50 |
| | C2007, 2008 | AXIAL CAPACITOR | CKPUYB101K50 |
| | C2011, 2012 | ELECTR. CAPACITOR | CEAS010M50 |
| | C2017 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C2020 | CERAMIC CAPACITOR | CKCYF473Z50 |

### RESISTORS

| | | |
|---|---|---|
| | R2001-2012 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | R2015-2020 | CARBONFILM RESISTOR | RD1/6PM□□□J |
| | VR2001 | VARIABLE RESISTOR | RCS1017 |
| | VR2002 | VARIABLE RESISTOR | RCV1061 |

### OTHERS

| | | |
|---|---|---|
| | JA2001, 2002 | JACK | RKN1003 |
| | JA2003 | JACK | RKN1002 |

## TRANS SEC UNIT

There is no supply part in this unit.

## OPERATE 1 UNIT

### SWITCHES

| | | |
|---|---|---|
| | S1301-1303 | SWITCH | RSG1033 |
| | S1305, 1306 | SWITCH | RSG1033 |

## OPERATE 2 UNIT

### SWITCHES

| | | |
|---|---|---|
| | S1401-1409 | SWITCH | RSG1033 |

## DOLBY SW UNIT

### RESISTORS

| | | |
|---|---|---|
| | R1520 | CARBONFILM RESISTOR | RD1/6PM□□□J |

### SWITCHES

| | | |
|---|---|---|
| | S1520 | SWITCH | RSH1024 |

# 7. ADJUSTMENTS

## 7.1 MECHANICAL ADJUSTMENT

- This adjustment should be performed in the test mode.
- Entering the test mode.

Short JP901 and JP902 (TP14) briefly. (The unit enters the TEST MODE.)

| Mode | Operation | Display |
|---|---|---|
| Side I<br>Double speed play | Double speed PLAY is selected by pressing the FAST key (side I or II) during PLAY mode of side I. | Side II counter : 4<br>HI-SPEED lights up. |
| Side II<br>Double speed play | Double speed PLAY is selected by pressing the FAST key (side I or II) during PLAY mode of side II. | Side II counter : 5<br>HI-SPEED lights up. |

To release the TEST MODE, press the side I COUNTER RESET key or turn off the unit.

1. Tape speed adjustment and check

| No. | Deck | Mode | Test tape | Adjusting points | Specifications/Ratings (playback frequency) | Remarks |
|---|---|---|---|---|---|---|
| 1 | I | Normal speed PLAY | STD-301<br>(3 kHz) | After playing back for 1 minute. | | |
| 2 | | Double speed PLAY | | check | 6000 Hz ± 600 Hz | |
| 3 | | Normal speed PLAY | | VR851 | 3000 Hz ± 5 Hz | |
| 4 | II | | | After checking, play back on deck II. | | |
| 5 | | Double speed PLAY | | After playing back for 1 minute. | | |
| 6 | | Normal speed PLAY | | VR802 | Within ± 10 Hz of the value measured in step 2 (deck I) | |
| 7 | | | | VR801 | 3000 Hz ± 5 Hz | |

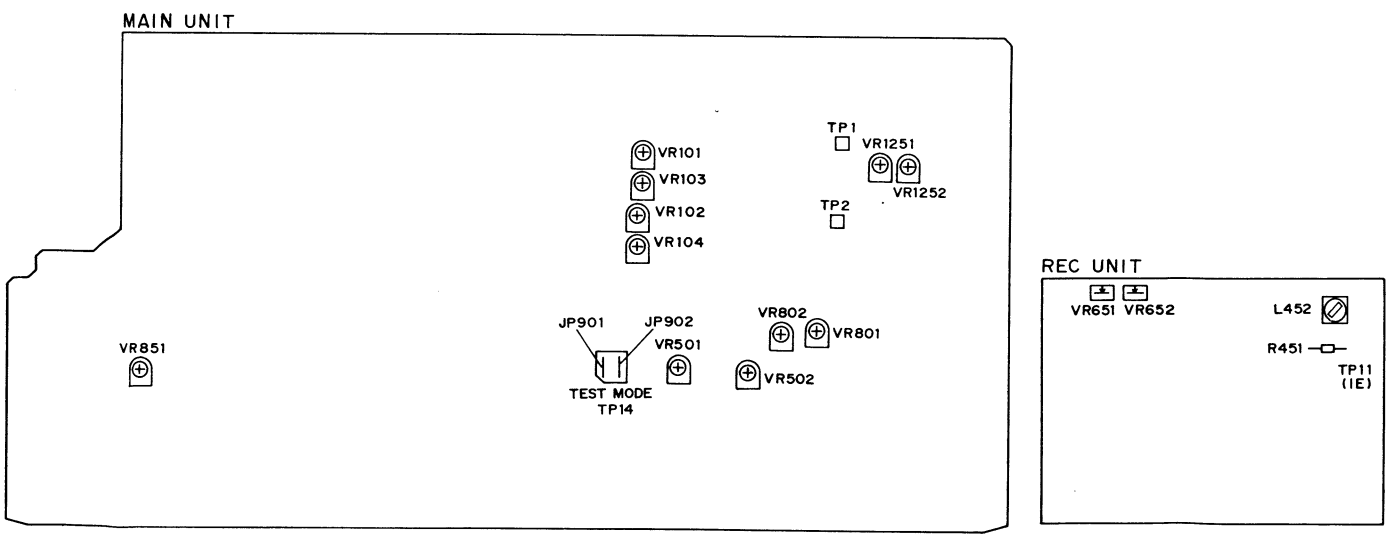



Fig. 7–1 Adjusting points

## 7.2 ELECTRICAL ADJUSTMENTS

### Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBv=1 Vrms.
5. Connect a 50 kΩ (or between 47k to 52 kΩ ) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

### Test Tapes

STD–331B : Playback adjustments (See Fig. 7–2)
STD–630 : NORMAL blank tape
STD–620 : $CrO_2$ blank tape
STD–610 : METAL blank tape

### List of Adjustments

#### Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

#### Recording sections

1. Bias oscillator adjustment.
2. Recording bias adjustment.
3. Recording level adjustment.
4. Level meter check.
5. AUTO BLE adjustment.

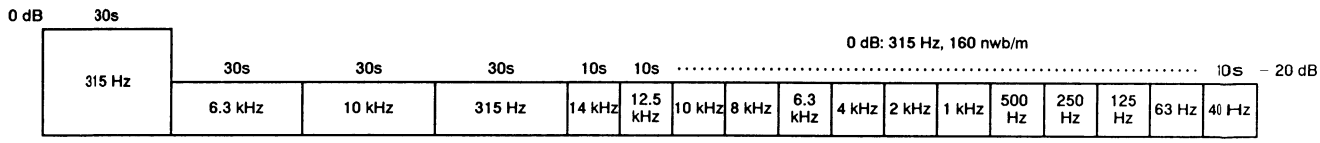



Fig. 7–2 Constants of the test tape STD–331B

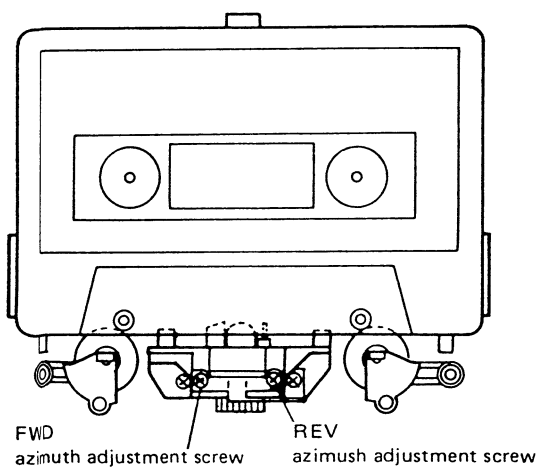



Fig. 7–3 Head azimuth adjustment

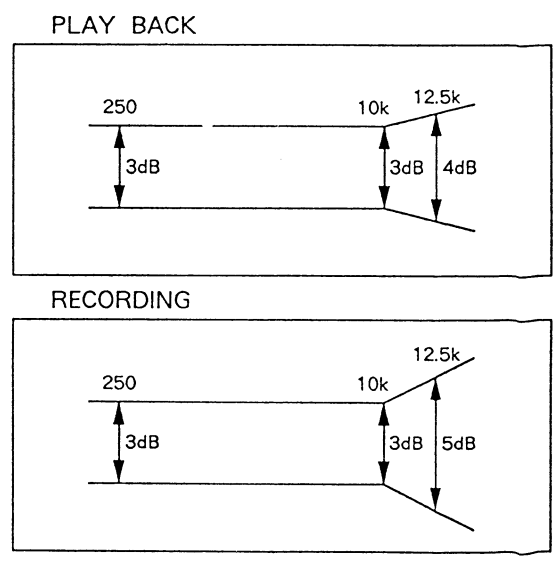



Fig. 7–4 Allowable playback frequency response zone

# PLAYBACK SECTION

## 1. Head Azimuth Adjustment

- Turn VR103, 104 (Deck I) or VR101, 102 (Deck II) to mechanical center positions.

| No. | Mode | Input signal & test tape | Adjustment location | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|
| 1. | PLAY | Play the 10 kHz/–20 dB section of STD–331B test tape. | Head azimuth adjustment screw. (See Fig. 7–3) | LINE OUT | Maximum playback signal level. | |
| 2. | STOP | Lock the screw with screw lock after completing adjustment. | | | | |

## 2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | PLAY | Play the 315 Hz/0 dB section of the STD–331B test tape. | Deck I | VR103 (Lch) VR104 (Rch) | TP. 1 (Lch) TP. 2 (Rch) | –10.7 dBv | |
| | | | Deck II | VR101 (Lch) VR102 (Rch) | | | |

# RECORDING SECTION

## 1. Bias Oscillator Adjustment

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | REC | Load the STD–610 test tape with no input signal. | Deck II | L452 | TP. 11 | $105^{+3}_{-0.3}$ kHz | |

## 2. Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | STOP | Load the test tape STD–630 (NORMAL). | | | | | |
| 2. | REC | Record the 315 Hz and 6.3 kHz signals at –20 dBv input level and playback. | Deck II | VR651 (Lch) VR652 (Rch) | LINE OUT | Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes +0.5 dB ± 0.5 dB when compared with the 315 Hz signal. | |

## 3. Recording Level Adjustment

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | REC/ PAUSE | Apply a 315 Hz/0 dBv signal to the line input terminals, load the STD–630 test tape. | REC level control volume | | TP. 1 (Lch) TP. 2 (Rch) | –11.2 dBv | |
| 2. | STOP | Set the DOLBY NR switch to the ON position. (DOLBY B) | | | | | |
| 3. | REC/ PLAY | Record the above signal onto the STD–630 test tape, and playback. | Deck | VR1251 (Lch) VR1252 (Rch) | TP. 1 (Lch) TP. 2 (Rch) | Repeatedly record, playback and adjust so that the playback signal level becomes –11.2 dB. | |
| 4. | STOP | Set the TAPE SELECTOR switch to the CrO2 position. | | | | | |
| 5. | REC/ PLAY | Record the above signal onto the STD–620 test tape, and playback. | Check | | TP. 1 (Lch) TP. 2 (Rch) | –11.2 dBv ± 1.5 dB | |
| 6. | STOP | Set the TAPE SELECTOR switch to the METAL position.REC level control volume. | | | | | |
| 7. | REC/ PLAY | Record the above signal onto the STD–610 test tape, and playback. | Check | | TP. 1 (Lch) TP. 2 (Rch) | –11.2 dBv ± 1.5 dB | |

## 4. Level Meter Check

| No. | Mode | Input signal & test tape | Adjustment location | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|
| 1. | REC/ PAUSE | Apply a 315 Hz/–10 dBv (316 mV) signal to the Line Input terminals. | REC level control volume | TP. 1 (Lch)<br>TP. 2 (Rch) | Check that the level meters "0 dB" light up within –11.2 dBv ± 2 dB of the signal output level. | |

## 5. AUTO BLE Adjustment

- BLE adjustment must be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode.
- Turn on POWER switch and short JP901 and JP902.

| No. | Mode | Input signal & test tape | Adjustment location | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|
| 1. | – | Set to the test mode. | – | – | – | |
| 2. | | Press the NORMAL SPEED key on the front panel. | Level meter | VR501 | Adjust so that 0 dB blinks on the level meter. *1 | 400 Hz adjustment |
| 3. | | Press the HIGH SPEED key. | | VR502 | Adjust so that 0 dB blinks on the level meter. *1 | 10 kHz adjustment |

*1 After adjustment of 2 and 3 the LINE OUT output becomes –16 dBv ± 1 dB.

- Releasing the test mode.
  Press the RESET (COUNTER) key on the DECK I side

# 7. RÉGLAGES

## 7.1 RÉGLAGE MECANIQUE

- Ce réglage doit être effectué dans le mode d'essai.
- Passage au mode d'essai.

Court–circuiter brièvement JP901 et JP902 (TP14). (L'appareil passe dans le MODE D'ESSAI).

| Mode | Opération | Indication |
|---|---|---|
| Lecture (PLAY) double vitesse pour le côté I | La lecture double vitesse est sélectionnée en appuyant sur la touche FAST (côté I ou II) pendant le mode lecture (PLAY) du côté I. | Compteur côté II : 4 HI–SPEED s'allume. |
| Lecture (PLAY) double vitesse pour le côté II | La lecture double vitesse est sélectionnée en appuyant sur la touche FAST (côté I ou II) pendant le mode lecture (PLAY) du côté II. | Compteur côté II : 5 HI–SPEED s'allume. |

Pour sortir du MODE D'ESSAI, appuyer sur la touche COUNTER RESET du côté I ou mettre l'appareil hors circuit.

1. Réglage et vérification de la vitesse de defilement de la bande

| No. | Platine | Mode | Bande test | Points de réglage | Spécifications/valeurs (fréquence de lecture) | Remarques |
|---|---|---|---|---|---|---|
| 1 | I | Lecture à vitesse normale | STD-301 (3 kHz) | Après reproduction pendant 1 minute. | | |
| 2 | | Lecture à vitesse double | | Vérifier | 6000 Hz ± 600 Hz | |
| 3 | | Lecture à vitesse normale | | VR851 | 3000 Hz ± 5 Hz | |
| 4 | II | | | Après le contrôle, reproduire sur la Platine II. | | |
| 5 | | Lecture à vitesse double | | Après reproduction pendant 1 minute. | | |
| 6 | | Lecture à vitesse normale | | VR802 | Dans la limite de ± 10 Hz de la valeur mesurée à l'étape 2 (Platine I). | |
| 7 | | | | VR801 | 3000 Hz ± 5 Hz | |

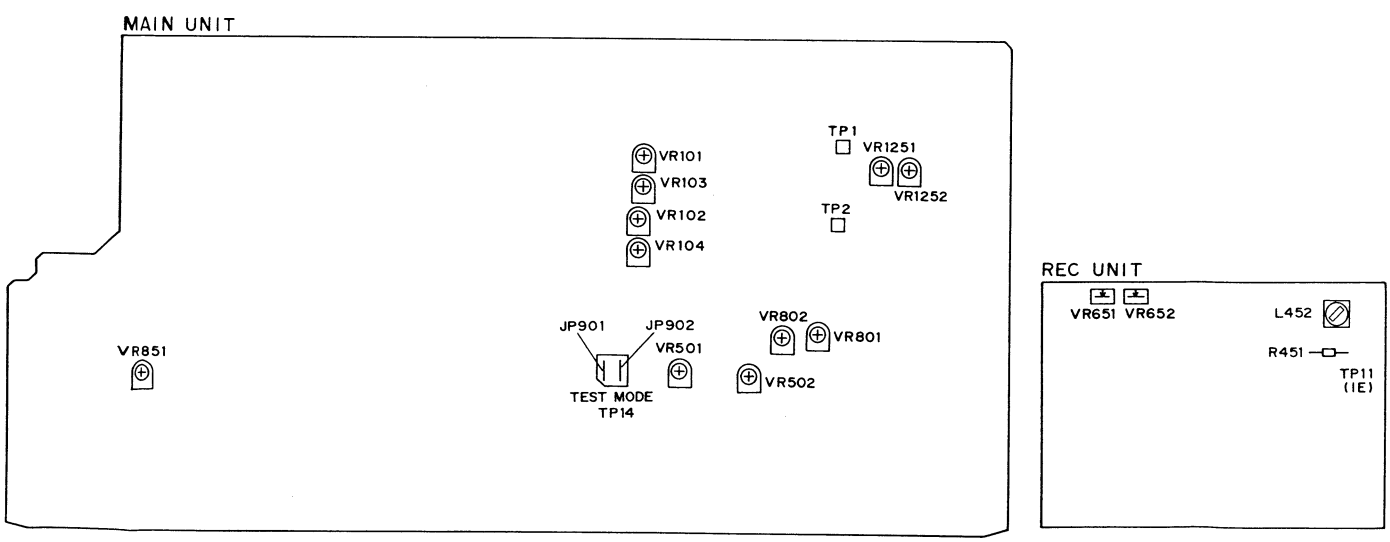



Fig. 7–1 Points de réglage

## 7.2 REGLAGES ELECTRIQUES

### Conditions de réglage

1. Les réglages mécaniques doivent tout d'abord être terminés.
2. Les têtes doivent être nettoyées et démagnétisées.
3. Mettre la platine sous tension et la laisser chauffer pendant au moins quelques minutes avant de commencer les réglages électriques.
4. Le signal de référence est de 0 dBv=1 Vrms.
5. Connecter une résistance de charge de 50 kΩ (tolérance 47k à 52 kΩ ) aux bornes de sortie (OUTPUT).
6. Sauf indication contraire, les commutateurs ci–dessous doivent être laissés sur les positions indiquées.
   DOLBY NR : OFF
   Sélecteur de bande (TAPE SELECTOR) : NORM

### Bandes d'essai

STD–331B : Réglages de la lecture (Voir fig. 7–2)
STD–630 : Bande vierge de type normal
STD–620 : Bande vierge de type chrome
STD–610 : Bande vierge de type métal

### Liste des réglages

#### Sections de lecture

1. Réglage de l'azimut de la tête.
2. Réglage du niveau de lecture.

#### Sections d'enregistrement

1. Réglage de l'oscillateur de polarisation.
2. Réglage de la polarisation d'enregistrement.
3. Réglage du niveau d'enregistrement.
4. Vérification de l'indicateur de niveau.
5. Réglage de AUTO BLE

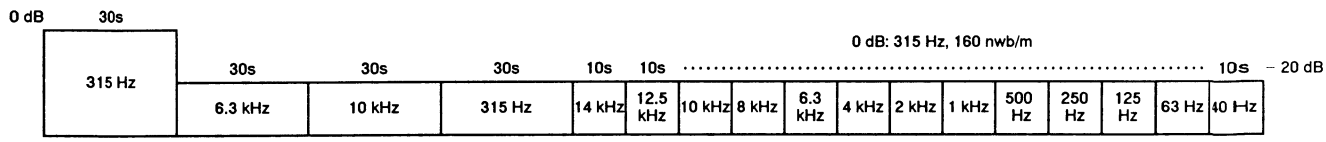



Fig. 7–2 Constantes de la bande d'essai STD–331B

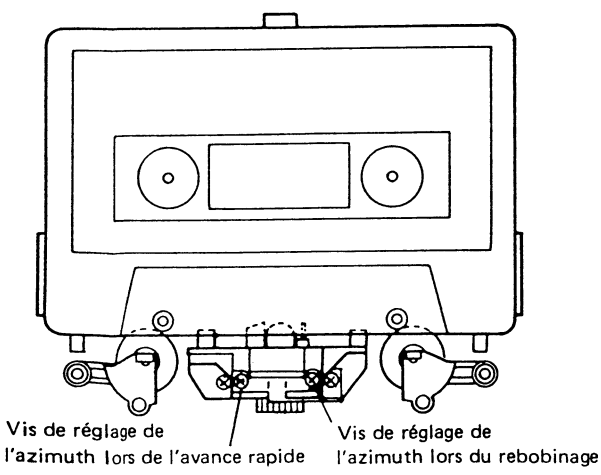



Fig. 7–3 Réglage de l'azimut de la tête

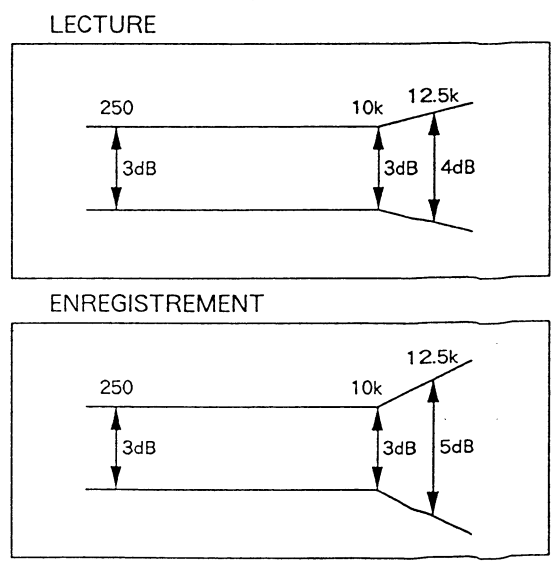



Fig. 7–4 Tolérance de la zone de réponse en fréquence de lecture

# SECTION DE LECTURE

## 1. Réglage de l'azimut de la tête

- Tourner VR103, 104 (Platine I) ou VR101,102 (Platine II) sur leur position centrale mécanique.

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|
| 1. | PLAY | Reproduire la section 10 kHz/–20 dB de la bande d'essai STD–331B. | Vis de réglage de l'azimut de la tête. (Voir fig. 7–3) | Sortie de ligne (LINE OUT) | Niveau du signal de reproduction maximum. | |
| 2. | STOP | Verrouiller la vis avec le verrouillage de vis après avoir terminé le réglage. | | | | |

## 2. Réglage du niveau de lecture

- Ce réglage détermine le niveau DOLBY NR et il doit être effectué très soigneusement.

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|---|
| 1. | PLAY | Reproduire la section 315 Hz/0 dB de la bande d'essai STD–331B. | Platine I | VR103 (can. G)<br>VR104 (can. D) | TP. 1 (can. G)<br>TP. 2 (can. D) | –10,7 dBv | |
| | | | Platine II | VR101 (can. G)<br>VR102 (can. D) | | | |

# SECTION D'ENREGISTREMENT

## 1. Réglage de l'oscillateur de polarisation

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|---|
| 1. | REC | Charger la bande d'essai STD–610 et n'introduire aucun signal. | Platine II | L452 | TP. 11 | $105\ ^{+3}_{-0,3}$ kHz | |

## 2. Réglage de la polarisation d'enregistrement

- Après le réglage, des précautions doivent être prises pour éviter une sous–polarisation en vérifiant le taux de distorsion.

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|---|
| 1. | STOP | Charger la bande d'essai STD–630 (NORMAL). | | | | | |
| 2. | REC | Enregistrer les signaux 315 Hz et 6,3 kHz à un niveau d'entrée de –20 dBv et les reproduire. | Platine II | VR651 (can. G)<br>VR652 (can. D) | Sortie de ligne (LINE OUT) | Enregistrer, reproduire et régler de manière répétée de sorte que le niveau de lecture du signal 6,3 kHz devienne +0,5 dB ± 0,5 dB lorsqu'il est comparé avec le signal 315 Hz. | |

## 3. Réglage du niveau d'enregistrement

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|---|
| 1. | REC/ PAUSE | Appliquer un signal de 315 Hz/0 dBv aux bornes d'entrée de ligne, charger la bande d'essai STD-630. | Volume de la commande de niveau d'enregistrement. | | TP. 1 (can. G)<br>TP. 2 (can. D) | -11,2 dBv | |
| 2. | STOP | Régler le commutateur DOLBY NR sur la position ON. (DOLBY B) | | | | | |
| 3. | REC/ PLAY | Enregistrer le signal cidessus sur la bande d'essai STD-630 et le reproduire. | Platine II | VR1251 (can. G)<br>VR1252 (can. D) | TP. 1 (can. G)<br>TP. 2 (can. D) | Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne -11,2 dB. | |
| 4. | STOP | Régler le sélecteur de bande (TAPE SELECTOR) sur la position CrO2. | | | | | |
| 5. | REC/ PLAY | Enregistrer le signal cidessus sur la bande d'essai STD-620 et le reproduire. | VR1251 (can. G)<br>VR1252 (can. D) | | TP. 1 (can. G)<br>TP. 2 (can. D) | -11,2 dBv ± 1,5 dB | |
| 6. | STOP | Régler le sélecteur de bande (TAPE SELECTOR) sur la position METAL. | | | | | |
| 7. | REC/ PLAY | Enregistrer le signal cidessus sur la bande d'essai STD-610 et le reproduire. | Vérifier | | TP. 1 (can. G)<br>TP. 2 (can. D) | -11,2 dBv ± 1,5 dB | |

## 4. Vérification de l'indicateur de niveau

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|
| 1. | REC/ PAUSE | Appliquer un signal de 315 Hz/-10 dBv (316 mV) aux bornes d'entrée de ligne. | Volume de la commande de niveau d'enregistrement | TP. 1 (can. G)<br>TP. 2 (can. D) | Vérifier que les indicateurs de niveau "0 dB" s'allument dans la limite de -11,2 dBv ± 2 dB du niveau de sortie du signal. | |

## 5. Réglage de AUTO BLE

- Le réglage de BLE doit être effectués que tous les autres réglages ont été complétés.
- Ce réglage doit être effectué dans le mode d'essai.
- Passage au mode d'essai.
- Appuyer sur l'interrupteur POWER et court-circuiter JP901 et JP902.

| No. | Mode | Signal d'entrée et bande d'essai | Points de réglage | Points de mesure | Valeur de réglage | Remarques |
|---|---|---|---|---|---|---|
| 1. | - | Régler dans le mode d'essai. | - | - | - | |
| 2. | | Appuyer sur la touche NORMAL SPEED du panneau avant. | Indicateur de niveau. | VR501 | Régler afin que 0 dB clignote sur l'indicateur de niveau. *1 | Réglage 400 Hz |
| 3. | | Appuyer sur la touche HIGH SPEED. | | VR502 | Régler afin que 0 dB clignote sur l'indicateur de niveau. *1 | Réglage 10 kHz |

*1 Aprés le réglage de 2 et 3, la sortie LINE OUT devient -16 dBv ± 1 dB.

- Sortie du mode d'essai.
  Appuyer sur la touche RESET (COUNTER) sur le côté platine I.

# 7. AJUSTES

## 7.1 AJUSTE MECANICO

- Este ajuste debe efectuarse en el modo de prueba.
- Cómo poner el modo de prueba

Cortocircuite JP901 y JP902 (TP14) durante un corto tiempo. (La unidad se pondrá en el MODO DE PRUEBA).

| Mode | Operatión | Indicación |
|---|---|---|
| Reproducción a doble velocidad para el lado I | La reproducción a doble velocidad se selecciona pulsando la tecla FAST (lado I o II) durante la reproducción del lado I. | Contador del lado II : 4 HI-SPEED se ilumina. |
| Reproducción a doble velocidad para el lado II | La reproducción a doble velocidad se selecciona pulsando la tecla FAST (lado I o II) durante la reproducción del lado II. | Contador del lado II : 5 HI-SPEED se ilumina. |

Para cancelar el modo de prueba, pulse la tecla COUNTER RESET del lado I o desconecte la alimentación de la unidad.

1. Ajuste y verificación de la velocidad de cinta

| No. | Platina | Modo | Cinta de prueba | Puntos de ajuste | Especificaciones/valores nominales (frecuencia de reproducción) | Comentarios |
|---|---|---|---|---|---|---|
| 1 | I | PLAY (velocidad normal) | STD-301 (3 kHz) | Después de reproducir durante 1 minuto. | | |
| 2 | | PLAY (velocidad doble) | | Verificar | 6000 Hz ± 600 Hz | |
| 3 | | | | VR851 | 3000 Hz ± 5 Hz | |
| 4 | II | PLAY (velocidad normal) | | Después de verificar, reproduzca en la platina II. | | |
| 5 | | PLAY (velocidad doble) | | Después de reproducir durante 1 minuto. | | |
| 6 | | PLAY (velocidad normal) | | VR802 | Dentro de ± 10 Hz del valor medido en el paso 2 (platina I). | |
| 7 | | | | VR801 | 3000 Hz ± 5 Hz | |

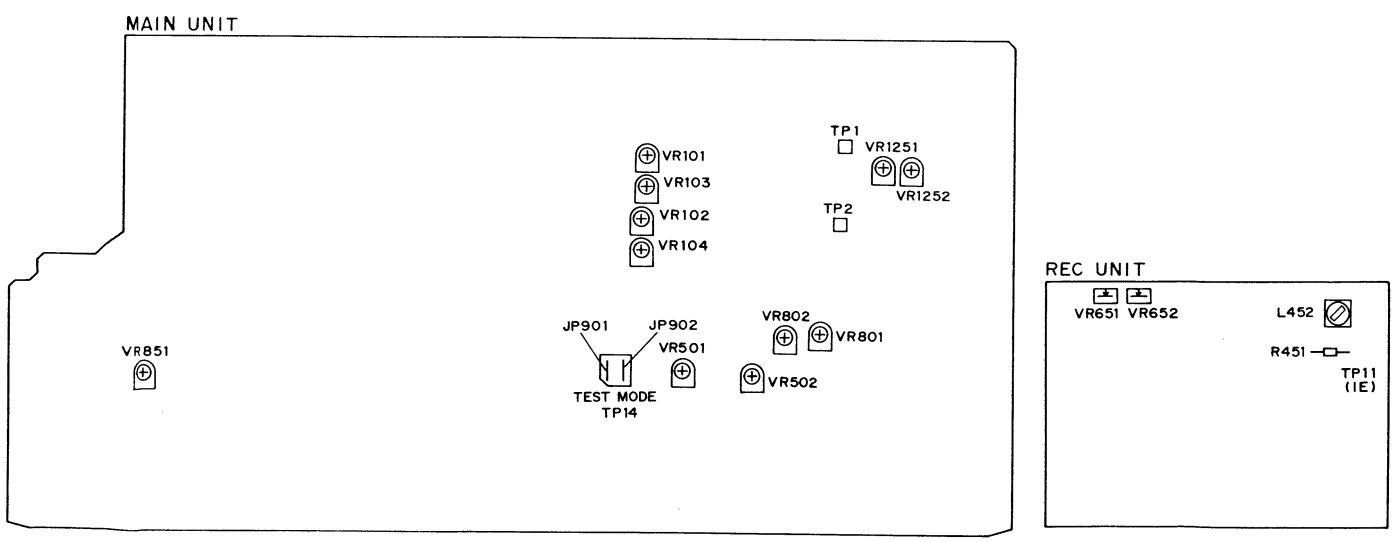



Figura 7–1 Puntos de ajuste

## 7.2 AJUSTES ELÉCTRICOS

### Condiciones de ajuste

1. Los ajustes mecánicos deben haberse completado primero.
2. La cabeza debe estar limpia y desmagnetizada.
3. Encienda la alimentación para permitir que la platina se caliente durante unos pocos minutos por lo menos antes de realizar cualquier ajuste eléctrico.
4. La señal de referencia es de 0 dBv=1 Vrms.
5. Conecte una resistencia de 50 kΩ (o entre 47k y 52 kΩ ) en los terminales OUTPUT.
6. A menos que se especifique lo contrario, los conmutadores indicados más abajo deben dejarse en las posiciones indicadas.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

### Cintas de prueba

STD–331B : Ajustes de reproducción (Consulte la figura 7–2)
STD–630 : Cinta virgen NORMAL
STD–620 : Cinta virgen de $CrO_2$
STD–610 : Cinta virgen de METAL

### Lista de ajustes

#### Secciones de reproducción

1. Ajuste de azimut de la cabeza
2. Ajuste del nivel de reproducción

#### Secciones de grabación

1. Ajuste del oscillador de polarización
2. Ajuste de la polarización de grabación
3. Ajuste del nivel de grabación
4. Verificación del medidor de nivel
5. Ajuste BLE Automático

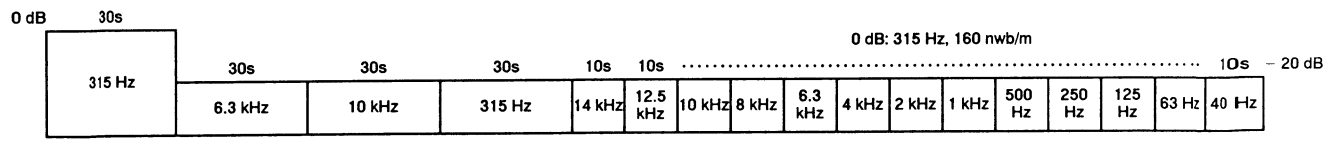



Figura 7–2 Constantes de la cinta de prueba STD–331B

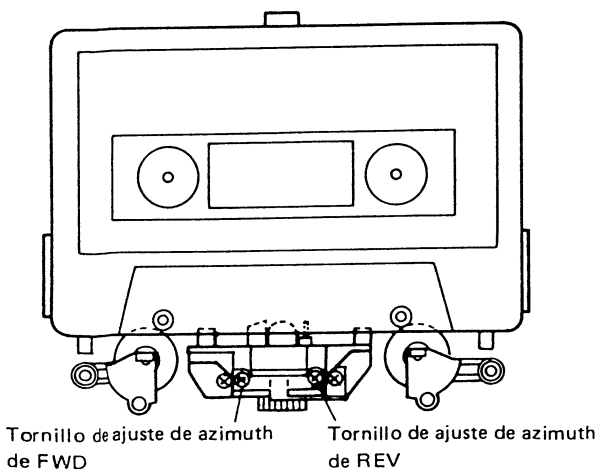



Figura 7–3 Ajuste de azimut de la cabeza

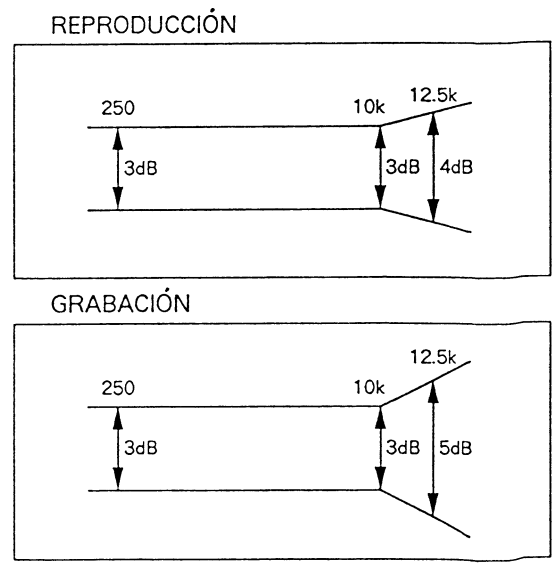



Figura 7–4 Zona permisible de respuesta de frecuencia de reproducción

# SECCIÓN DE REPRODUCCIÓN

## 1. Ajuste del azimut de la cabeza

- Poner VR103, 104 (platina I) o VR101, 102 (platina II) en las posiciones del centro mecánico.

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|
| 1. | PLAY | Reproduzca la sección de 10 kHz/–20 dB de la cinta de prueba STD–331B. | Tornillo de ajuste del azimut de la cabeza. (Vea la figura 7–3) | LINE OUT | Nivel máximo de la señal de reproducción. | |
| 2. | STOP | Bloquee el tornillo con su cierre una vez finalizado el ajuste. | | | | |

## 2. Ajuste del nivel de reproducción

- Este ajuste determina el nivel DOLBY NR y debe realizarse con mucho cuidado.

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|---|
| 1. | PLAY | Produzca la parte de 315 Hz/0 dB de la cinta de prueba STD–331B. | Platina I | VR103 (Lch) VR104 (Rch) | TP. 1 (Lch) TP. 2 (Rch) | –10,7 dBv | |
| | | | Platina II | VR101 (Lch) VR102 (Rch) | | | |

# SECCIÓN DE GRABACIÓN

## 1. Ajuste del oscilador de polarización

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|---|
| 1. | REC | Introduzca la cinta de prueba STD–610 sin señal de entrada. | Platina II | L452 | TP. 11 | $105\ ^{+3}_{-0,3}$ kHz | |

## 2. Ajuste de polarización de grabación

- Una vez finalizado el ajuste, compruebe el porcentaje de distorsión para no obtener subpolarización.

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|---|
| 1. | STOP | Cargue la cinta de prueba STD–630 (NORMAL). | | | | | |
| 2. | REC | Grabe la señal de 315 Hz y 6,3 kHz a un nivel de entrada de –20 dBv y reprodúzcala. | Platina II | VR651 (Lch) VR652 (Rch) | LINE OUT | Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6,3 kHz sea de +0,5 dB ± 0,5 dB cuando se compare con la señal de 315 Hz. | |

### 3. Ajuste del nivel de grabación

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|---|
| 1. | REC/ PAUSE | Aplique una señal de 315 Hz/0 dBv a los terminales de entrada de línea e introduzca la cinta de prueba STD-630. | Control de nivel de grabación. | | TP. 1 (Lch)<br>TP. 2 (Rch) | -11,2 dBv | |
| 2. | STOP | Ponga el conmutador DOLBY NR en la posición ON. (DOLBY B) | | | | | |
| 3. | REC/ PLAY | Grabe la señal de arriba en la cinta de prueba STD-630 y reprodúzcala. | Platina II | VR1251 (Lch)<br>VR1252 (Rch) | TP. 1 (Lch)<br>TP. 2 (Rch) | Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de -11,2 dB. | |
| 4. | STOP | Ponga el conmutador TAPE SELECTOR en la posición CrO2. | | | | | |
| 5. | REC/ PLAY | Grabe la señal de arriba en la cinta de prueba STD-620 y reprodúzcala. | Verifique | | TP. 1 (Lch)<br>TP. 2 (Rch) | -11,2 dBv ± 1,5 dB | |
| 6. | STOP | Ponga el conmutador TAPE SELECTOR en la posición METAL. | | | | | |
| 7. | REC/ PLAY | Grabe la señal de arriba en la cinta de prueba STD-610 y reprodúzcala. | Verifique | | TP. 1 (Lch)<br>TP. 2 (Rch) | -11,2 dBv ± 1,5 dB | |

### 4. Verificación del medidor de nivel

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|
| 1. | REC/ PAUSE | Aplique una señal de 315 Hz/-10 dBv (316 mV) a los terminales de entrada de línea. | Control de nivel de grabación | TP. 1 (Lch)<br>TP. 2 (Rch) | Verifique si se encienden los medidores de nivel "0 dB" cuando el nivel de salida de la señal sea -11,2 dBv±2 dB | |

### 5. Ajuste BLE Automático

- El ajuste BLE debe efectuarse después de haber terminado todos los otros ajustes.
- Este ajuste debe efectuarse en el modo de prueba.
- Cómo poner el modo de prueba.
- Conecte el interruptor de corriente POWER y cortocircuite JP901 y JP902.

| N.º | Modo | Señal de entrada y cinta de prueba | Punto de ajuste | Punto de medición | Valor de ajuste | Comentarios |
|---|---|---|---|---|---|---|
| 1. | - | Ponga el modo de prueba. | - | - | - | |
| 2. | | Pulse la tecla NORMAL SPEED del panel delantero. | Medidor de nivel | VR501 | Ajuste de modo que parpadee 0 dB en el medidor de nivel. *1 | Ajuste de 400 Hz |
| 3. | | Pulse la tecla HIGH SPEED. | | VR502 | Ajuste de modo que parpadee 0 dB en el medidor de nivel. *1 | Ajuste de 10 kHz |

*1 Después del ajuste de 2 y 3, la salida de LINE OUT pasa a ser -16 dB ± 1 dB.

- Cancelación del modo de prueba.
  Pulse la tecla RESET (COUNTER) de la platina I

# 8. IC DESCRIPTIONS

## ● PD4314A

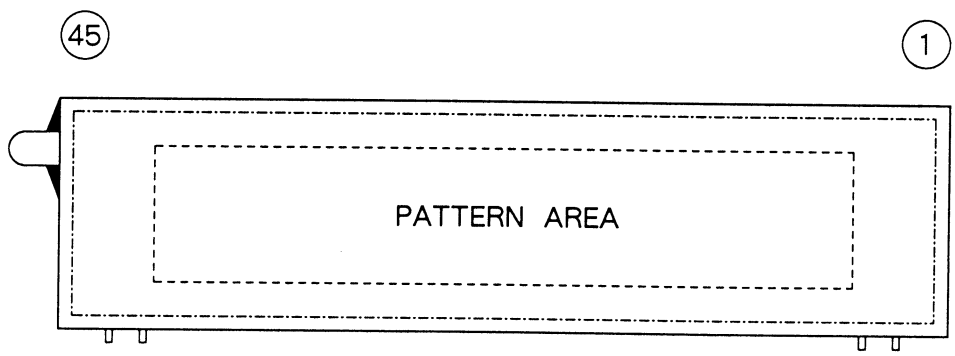
| Pin No. | Symbol | I/O | Function | Active |
|---|---|---|---|---|
| 1 | $S_3$ | O | Level scan ($S_0$ to $S_4$), key scan ($S_0$ to $S_9$)<br>Output terminal for dynamic FL display ($S_0$ to $S_9$)<br>(Controlled by time division) | H |
| 2 | $S_2$ | | | |
| 3 | $S_1$ | | | |
| 4 | $S_0$ | | | |
| 5 | KEY0 | I | Key scan input terminal<br>"L": switch on | L |
| 6 | KEY1 | | | |
| 7 | KEY2 | | | |
| 8 | KEY3 | | | |
| 9 | POWER OFF | I | Power off detect input terminal | H |
| 10 | REMOCON | I | Remote control input | L |
| 11 | METL | I | Lch level detection input terminal | H |
| 12 | METR | I | Rch level detection input terminal | H |
| 13 | 1RMP | O | Output terminal for 1 mechanism reel motor play torque selection | H |
| 14 | 1RML | O | 1 mechanism reel motor REV direction drive terminal | H |
| 15 | 1RMR | O | 1 mechanism reel motor FWD direction drive terminal | H |
| 16 | 1CPM | O | 1 mechanism capstan motor drive terminal | H |
| 17 | 1SLA | O | Output terminal for 1 mechanism solenoid drive | H |
| 18 | 1SLB | O | Output terminal for holding 1 mechanism solenoid reducing electricity | H |
| 19 | 2SLA | O | Output terminal for 2 mechanism solenoid drive | H |
| 20 | 2SLB | O | Output terminal for holding 2 mechanism solenoid reducing electricity | H |
| 21 | 2SEN | I | Input terminal for 2 mechanism sensing pulse | |
| 22 | 1SEN | I | Input terminal for 1 mechanism sensing pulse | |
| 23 | $\overline{\text{LINEM}}$ | O | Line out mute terminal | L |
| 24 | RECM | O | Recording amplifier mute output terminal | H |
| 25 | 2RMP | O | Output terminal for 2 mechanism reel motor play torque selection | H |
| 26 | 2RML | O | 2 mechanism reel motor REV direction drive terminal | H |
| 27 | 2RMR | O | 2 mechanism reel motor FWD direction drive terminal | H |
| 28 | 2CPM | O | 2 mechanism capstan motor drive terminal | H |
| 29 | OSC (400/10k) | O | Square wave (400 Hz/10 kHz) output terminal for AUTO-BLE | |
| 30 | OSC1 | | Crystal connect terminal | |
| 31 | OSC2 | | | |
| 32 | GNDD | – | GND | – |

| Pin No. | Symbol | I/O | Function | Active |
|---|---|---|---|---|
| 33 | | – | Not used | – |
| 34 | | | | |
| 35 | CLK | O | (*) | H |
| 36 | DATA | O | DATA output terminal for extension IC | H |
| 37 | 1×1 | O | 1 mechanism constant-speed/double-speed selection output terminal<br>"L": double speed | H |
| 38 | 2×1 | O | 2 mechanism constant-speed/double-speed selection output terminal<br>"L": double speed | H |
| 39 | $\overline{\text{RESET}}$ | I | System reset terminal | L |
| 40 | $T_0$ | O | Grid output terminal for dynamic FL display | H |
| 41 | $T_1$ | | | |
| 42 | $T_2$ | | | |
| 43 | $T_3$ | | | |
| 44 | $T_4$ | | | |
| 45 | $T_5$ | | | |
| 46 | $T_6$ | | | |
| 47 | $T_7$ | | | |
| 48 | $T_8$ | | | |
| 49 | $T_9$ | | | |
| 50 | $T_{10}$ | | | |
| 51 | BIAS | O | Bias oscillation. ON: "H", OFF: "L" | H |
| 52 | TO CD | O | CD control signal output terminal | H |
| 53 | DEC | O | Dolby NR IC. Decode: "H", Encode: "L" | H |
| 54 | 2PB | O | 2 mechanism playback: "H" | H |
| 55 | BLE ON | O | When AUTO-BLE: "H", sets line in, mute ON, dolby NR OFF and test signal ON. | H |
| 56 | | – | Not used | – |
| 57 | $V_{PRE}$ | – | Output buffer power terminal of FL controller/driver inside microprocessor. | – |
| 58 | $S_9$ | O | (*1) | H |
| 59 | $S_8$ | | | |
| 60 | $S_7$ | | | |
| 61 | $S_6$ | | | |
| 62 | $S_5$ | | | |
| 63 | $S_4$ | | | |
| 64 | VC5V | – | Power terminal +5V | – |

(*) When CT-W650R, clock output terminal for extension IC
In CT-W550R, refast is set to become output terminal for meter amplifier time constant (recovery time) selection. "H": short.
(*1) Same function as in Pin No. 1 to Pin No. 4.

## ● BU2040

| Pin No. | Symbol | I/O | Function | Active |
|---|---|---|---|---|
| 1 | GND | – | GND | – |
| 2 | DATA | I | DATA input terminal | H |
| 3 | CLK | I | Clock input terminal | H |
| 4 | LS0 | O | Output terminal for REC level correction (4 bit) | H |
| 5 | LS1 | | | |
| 6 | LS2 | | | |
| 7 | LS3 | | | |
| 8 | ES0 | O | Output terminal for REC EQ correction (4 bit) | H |
| 9 | ES1 | | | |
| 10 | ES2 | | | |
| 11 | ES3 | | | |
| 12 | BS0 | O | Output terminal for bias intensity correction when REC (2 bit) | H |
| 13 | BS1 | | | |
| 14 | FSEL | O | When AUTO–BLE, output selection of 400 Hz and 10 kHz. "H": 10 kHz. | H |
| 15 | REFAST | O | Output terminal for meter amplifier time constant (recovery time) selection. "H": short | H |
| 16 | Vcc | – | Power terminal +5V | – |

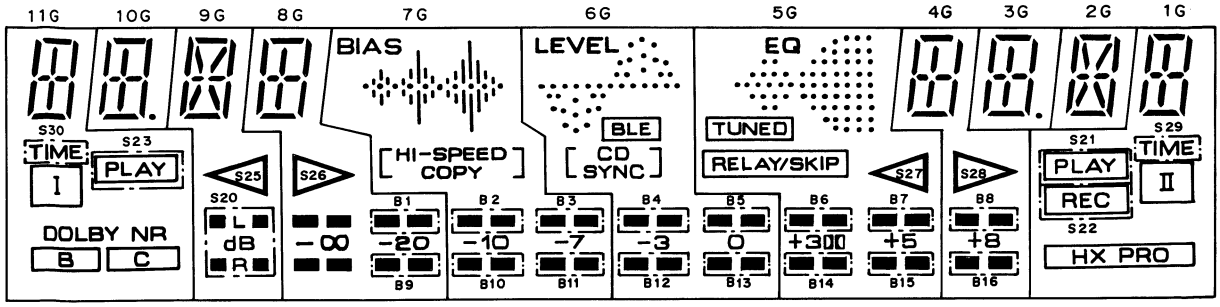


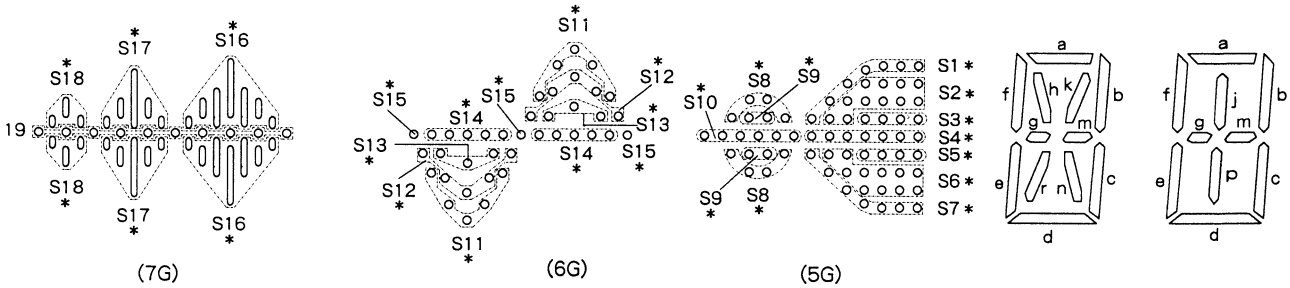

## PIN CONNECTION

| PIN NO. | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | F2 | F2 | NP | P1 | P2 | P6 | P12 | P11 | P7 | P8 | P9 | P5 | P3 | P4 | P14 | P10 | P19 | P20 | P21 | P22 | P15 | P28 | P23 |

| PIN NO. | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | P16 | P13 | P25 | P24 | P27 | P26 | P17 | P18 | 11G | 10G | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G | NP | F1 | F1 |

**Note:** 1) F1, F2 ····· Filament
2) NP····· No pin
3) 1G to 11G ··· Grid




## ANODE CONNECTION

| | 11G | 10G | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P1 | a | a | a | a | S18 * | S14 * | S4 * | a | a | a | a |
| P2 | b | b | b | b | S17 * | S13 * | S2 * | b | b | b | b |
| P3 | c | c | c | c | S16 * | S12 * | S1 * | c | c | c | c |
| P4 | d | d | d | d | BIAS | S11 * | TUNED | d | d | d | d |
| P5 | e | e | e | e | HI-SPEED | LEVEL | PLAY/SKIP | e | e | e | e |
| P6 | f | f | f | f | COPY | CD SYNC | ◀ (S27) | f | f | f | f |
| P7 | m | m | m, g | m | B2 | B4 | B6 | m | m | m, g | m |
| P8 | S30 | Dp, 2 | k, r | ▶ (S26) | B10 | B12 | B14 | (S28) ▶ | Dp, l | k, r | S29 |
| P9 | S23 | j, p | n | B1 | B3 | B5 | B7 | B8 | j, p | n | S21 |
| P10 | S24 | – | ◀ (S25) | B9 | B11 | B13 | B15 | B16 | – | – | S22 |
| P11 | g | g | – | g | – | – | – | g | g | – | g |
| P12 | j, p | – | h | j, p | – | – | S9 * | j, p | – | h | j, p |
| P13 | – | – | – | – | – | – | S8 * | – | – | – | – |
| P14 | l | – | – | – | S19 * | S15 * | S10 * | – | – | – | II |
| P15 | – | – | – | – | – | BLE | – | – | – | – | – |
| P16 | – | – | – | – | – | – | EQ | – | – | – | – |
| P17 | – | – | – | – | – | – | – | – | – | – | TWIN |
| P18 | – | – | – | – | – | – | – | – | – | – | HX PRO |
| P19 | – | – | S20 | −∞ −20 | −10 −7 | −3 0 | +3 +5 | +8 | – | – | – |
| P20 | DOLBY NR | – | – | – | – | – | – | – | – | – | – |
| P21 | B | – | – | – | – | – | – | – | – | – | – |
| P22 | C | – | – | – | – | – | – | – | – | – | – |
| P23 | – | – | – | – | – | – | H | – | – | – | – |
| P24 | – | – | – | – | – | – | S6 * | – | – | – | – |
| P25 | – | – | – | – | – | – | S7 * | – | – | – | – |
| P26 | – | – | – | – | – | – | S3 * | – | – | – | – |
| P27 | – | – | – | – | – | – | S5 * | – | – | – | – |
| P28 | – | – | – | – | – | – | M– | – | – | – | – |

* CT–W650R only

# 9. FOR CT–W650R/HEM, HB AND SD TYPES

## CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

**The CT–W650R/HEM, HB and SD types are the same as the CT–W650R/KUC type with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | | | Remarks |
|---|---|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W650R/ HEM type | CT–W650R/ HB type | CT–W650R/ SD type | |
| | Display unit | Non supply | Non supply | Non supply | Non supply | |
| ⚠ | Strain relief | CM–22 | CM–22B | CM–22B | CM–22B | |
| ⚠ | FU1, FU2 Fuse (1.5A) | REK1001 | ..... | ..... | ..... | |
| ⚠ | FU1, FU2 Fuse (1.6A) | ..... | REK–102 | REK–102 | REK–102 | |
| ⚠ | AC Power cord | RDG1010 | PDG1003 | PDG1036 | PDG1013 | |
| ⚠ | Power transformer (AC120V) | RTT1165 | ..... | ..... | ..... | |
| ⚠ | Power transformer (AC220–230/230–240V) | ..... | RTT1166 | RTT1166 | ..... | |
| ⚠ | Power transformer (AC110/120–127/220/240V) | ..... | ..... | ..... | RTT1167 | |
| ⚠ | Voltage selector | ..... | ..... | ..... | PSB1002 | |
| | FL lens | RAH1830 | RAH1833 | RAH1833 | RAH1830 | |
| | Operating instructions (English) | RRB1091 | ..... | RRB1091 | RRB1091 | |
| | Operating instructions (English/French/German/Italian/Dutch/ Swedish/Spanish/Portuguese) | ..... | RRE1040 | ..... | ..... | |
| | Packing case | RHG1293 | RHG1268 | RHG1268 | RHG1268 | |

## DISPLAY UNIT

**The display units (for CT–W650R/HEM, HB types) are the same as the display unit (for CT–W650R/KUC type) with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W650R/ HEM and HB types | |
| | V1501 FL tube | RAW1082 | RAW1074 | |

# 10. FOR CT–W550R/KUC, HEM, HB, HPW, SD AND CT–W550R–S/HEWM TYPES

## CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

**The CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/HEWM types are the same as the CT–W650R/KUC type with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W550R/ KUC type | CT–W550R/ HEM type | CT–W550R/ HB type | CT–W550R/ HPW type | CT–W550R/ SD type | CT–W550R–S /HEWM type |
| | Main unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| | Display unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| | Volume unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| | TRANS SEC unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| | Operate 1 unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| | Operate 2 unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| | Dolby SW unit | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply | Non supply |
| ⚠ | Strain relief | CM–22 | CM–22 | CM–22B | CM–22B | CM–22B | CM–22B | CM–22B |
| ⚠ | AC Power cord | RDG1010 | RDG1010 | PDG1003 | PDG1036 | PDG1006 | PDG1013 | PDG1003 |
| ⚠ | FU1, FU2 Fuse (1.5A) | REK1001 | REK1001 | ..... | ..... | ..... | ..... | ..... |
| ⚠ | FU1, FU2 Fuse (1.6A) | ..... | ..... | REK–102 | REK–102 | REK–102 | REK–102 | REK–102 |
| ⚠ | Power transformer (AC120V) | RTT1165 | RTT1165 | ..... | ..... | ..... | ..... | ..... |
| ⚠ | Power transformer (AC220–230/230–240V) | ..... | ..... | RTT1166 | RTT1166 | RTT1166 | ..... | RTT1166 |
| ⚠ | Power transformer (AC110/120–127/220/240V) | ..... | ..... | ..... | ..... | ..... | RTT1167 | ..... |
| ⚠ | Voltage selector | ..... | ..... | ..... | ..... | ..... | PSB1002 | ..... |
| | BLE knob | RAC1601 | ..... | ..... | ..... | ..... | ..... | ..... |
| | BLE mold | RAH1729 | ..... | ..... | ..... | ..... | ..... | ..... |
| | Stabilizer panel | RAH1483 | ..... | ..... | ..... | ..... | ..... | ..... |
| | Door pocket (L) | RAH1828 | RAH1831 | RAH1831 | RAH1831 | RAH1831 | RAH1831 | RAH1834 |
| | Door pocket (R) | RAH1829 | RAH1832 | RAH1832 | RAH1832 | RAH1832 | RAH1832 | RAH1835 |
| | Stabilizer (B) | REB1085 | ..... | ..... | ..... | ..... | ..... | ..... |
| | Stopper | VEC1061 | ..... | VEC1061 | VEC1061 | VEC1061 | VEC1061 | VEC1061 |
| | Insulator | VNK1095 | ..... | VNK1095 | VNK1095 | VNK1095 | VNK1095 | VNK1095 |
| | Leg assembly | ..... | PXA1201 | ..... | ..... | ..... | ..... | ..... |
| | Operation knob (B) | ..... | RAC1424 | RAC1424 | RAC1424 | RAC1424 | RAC1424 | RAC1484 |
| | REC mold | ..... | RAH1611 | RAH1611 | RAH1611 | RAH1611 | RAH1611 | RAH1623 |
| | FL lens | RAH1830 | RAH1830 | RAH1833 | RAH1833 | RAH1830 | RAH1830 | RAH1833 |
| | Knob (B) | RAC1414 | RAC1414 | RAC1414 | RAC1414 | RAC1414 | RAC1414 | RAC1492 |
| | VR knob (B) | RAC1421 | RAC1421 | RAC1421 | RAC1421 | RAC1421 | RAC1421 | RAC1483 |
| | Counter knob | RAC1426 | RAC1426 | RAC1426 | RAC1426 | RAC1426 | RAC1426 | RAC1606 |

| Mark | Symbol & Description | Part No. | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | CT-W650R/ KUC type | CT-W550R/ KUC type | CT-W550R/ HEM type | CT-W550R/ HB type | CT-W550R/ HPW type | CT-W550R/ SD type | CT-W550R-S /HEWM type |
| | Power knob | RAC1427 | RAC1427 | RAC1427 | RAC1427 | RAC1427 | RAC1427 | RAC1489 |
| | Slide knob | RAC1428 | RAC1428 | RAC1428 | RAC1428 | RAC1428 | RAC1428 | RAC1486 |
| | VR knob (A) | RAC1430 | RAC1430 | RAC1430 | RAC1430 | RAC1430 | RAC1430 | RAC1485 |
| | Operation knob (C) | RAC1475 | RAC1475 | RAC1475 | RAC1475 | RAC1475 | RAC1475 | RAC1493 |
| | Operation knob (A) | RAC1479 | RAC1479 | RAC1479 | RAC1479 | RAC1479 | RAC1479 | RAC1488 |
| | Eject knob | RAC1480 | RAC1480 | RAC1480 | RAC1480 | RAC1480 | RAC1480 | RAC1491 |
| | REC mold (L) | RAH1608 | RAH1608 | RAH1608 | RAH1608 | RAH1608 | RAH1608 | RAH1645 |
| | Bonnet | RXX1396 | RXX1396 | RXX1396 | RXX1396 | RXX1396 | RXX1396 | RXX1397 |
| | Front panel assembly | RXX1374 | RXX1372 | RXX1372 | RXX1372 | RXX1372 | RXX1372 | RXX1373 |
| | Packing case | RHG1293 | RHG1292 | RHG1269 | RHG1269 | RHG1269 | RHG1269 | RHG1270 |
| | Operating instructions (English) | RRB1091 | RRB1091 | ..... | RRB1091 | RRB1091 | RRB1091 | ..... |
| | Operating instructions (English/French/German/Italian/Dutch/ Swedish/Spanish/Portuguese) | ..... | ..... | RRE1040 | ..... | ..... | ..... | RRE1040 |
| | Operating instructions (Spanish) | ..... | ..... | ..... | ..... | ..... | RRD1097 | ..... |

**Note:** TRANS SEC unit, Operate 2 unit, Dolby SW unit no different parts to be supplied.

## MAIN UNIT

**The main units (for CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/HEWM types) are the same as the main unit (for CT–W650R/KUC type) with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/ HEWM types | |
| | IC503 | TC4066BP | ..... | |
| | IC504 | BA15218N | ..... | |
| | IC510 | BU2040 | ..... | |
| | D922 | 1SS254 | ..... | |
| | Q253, Q254 | 2SD2144S | ..... | |
| | Q255, Q1251–Q1264 | DTC114TS | ..... | |
| | Q501 | DTA124ES | ..... | |
| | Q502 | DTC124ES | ..... | |
| | C501 | CGCYX223K25 | ..... | |
| | C502 | CGCYX222K25 | ..... | |
| | C503 | CGCYX104K25 | ..... | |
| | C504 | CGCYX103K25 | ..... | |
| | C505, C506 | CEAS010M50 | ..... | |
| | C507 | CKCYF473Z50 | ..... | |
| | R269, R270 | RD1/6PM681J | ..... | |
| | R512, R514 | RD1/6PM223J | ..... | |
| | R517 | RA5T223J | ..... | |
| | R518 | RA7T223J | ..... | |
| | R519–R521, R549, R1273 | RD1/6PM103J | ..... | |
| | R522 | RD1/6PM104J | ..... | |
| | R523 | RD1/6PM823J | ..... | |
| | R524 | RD1/6PM683J | ..... | |
| | R531 | RD1/6PM223J | ..... | |
| | R1257, R1258 | RD1/6PM272J | RD1/6PM751J | |
| | R1259 | RD1/6PM822J | ..... | |
| | R1260 | RD1/6PM822J | ..... | |
| | R1261, R1262 | RD1/6PM392J | ..... | |
| | R1263, R1264 | RD1/6PM202J | ..... | |
| | R1265, R1266 | RD1/6PM102J | ..... | |
| | R1267 | RD1/6PM165J | RD1/6PM244J | |
| | R1268 | RD1/6PM824J | ..... | |
| | R1269 | RD1/6PM434J | ..... | |
| | R1270 | RD1/6PM224J | ..... | |
| | R1271 | RD1/6PM472J | RD1/6PM332J | |
| | R1272 | RD1/6PM432J | ..... | |
| | VR501, VR502 | RCP1046 | ..... | |

## DISPLAY UNIT

**The display units (for CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/HEWM types) are the same as the display unit (for CT–W650R/KUC type) with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/ HEWM types | |
| | V1501 FL tube | RAW1082 | RAW1083 | |

## VOLUME UNIT

**The volume units (for CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/HEWM types) are the same as the volume unit (for CT–W650R/KUC type) with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/ HEWM types | |
| | IC2001 | BA15218 | ..... | |
| | C2001, C2002 | CKPUYB681K50 | ..... | |
| | C2003, C2004, C2011, C2012 | CEAS010M50 | ..... | |
| | C2005, C2006 | CEAS100M50 | ..... | |
| | C2007, C2008 | CKPUYB101K50 | ..... | |
| | C2017 | CKCYF473Z50 | ..... | |
| | R2001, R2002 | RD1/6PM222J | ..... | |
| | R2003, R2004 | RD1/6PM103J | ..... | |
| | R2005–R2008, R2017, R2018 | RD1/6PM104J | ..... | |
| | R2009, R2010 | RD1/6PM181J | ..... | |
| | R2011, R2012 | RD1/6PM333J | ..... | |
| | JA2001, JA2002 | RKN1003 | ..... | |

## OPERATE 2 UNIT

**The operate 2 units (for CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/HEWM types) are the same as the operate 2 unit (for CT–W650R/KUC type) with the exception of the following sections.**

| Mark | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|
| | | CT–W650R/ KUC type | CT–W550R/KUC, HEM, HB, HPW, SD and CT–W550R–S/ HEWM types | |
| | S1409 | RSG1033 | ..... | |

# 11. SPECIFICATIONS

System ..... 4-track, 2-channel stereo
Heads ..... "Hard permalloy" recording/playback head × 1
"Hard permalloy" playback head × 1
"Ferrite" erasing head × 1
Motors ..... DC servo motor × 2
DC reel motor × 2
Wow and Flutter
U.K. and European models ..... No more than 0.055% (WRMS)
No more than ±0.16% (DIN)
Other models ..... No more than 0.10% (WRMS)
Fast Winding Time ..... Approx. 90 seconds (C-60 tape)
Frequency Response (at −20 dB recording level)
[CT-W650R]
Metal Tape ..... 20 to 19,000 Hz
Chrome Tape ..... 20 to 18,000 Hz
Normal Tape ..... 20 to 17,000 Hz
[CT-W550R]
Metal Tape ..... 20 to 19,000 Hz
Chrome Tape ..... 20 to 18,000 Hz
Normal Tape ..... 20 to 17,000 Hz
Signal-to-Noise Ratio
Dolby NR off ..... More than 57 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C-type NR ON ..... More than 19 dB (at 5 kHz)
Harmonic Distortion ..... No more than 0.8 % (at 0 dB)
Input (Sensitivity)
LINE (INPUT) ..... 63 mV (Input impedance 68 kΩ)
MIC (CT-W650R only) ..... 0.4 mV
Output (Reference level)
LINE (OUTPUT) ..... 316 mV (Output impedance 3.1 kΩ)
Headphones (PHONES) ..... 0.25 mW (Output impedence 8 Ω)

## Miscellaneous

Power requirements
U.S., Canadian model ..... AC 120 V, 60 Hz
U.K. and Australian models ..... AC 230—240 Volts ~, 50/60 Hz
European model ..... AC 220—230 Volts ~, 50/60 Hz
Multi-voltage model ..... AC 110 V/120 V—127 V/220 V/240 V (switchable), 50/60 Hz
Power consumption
[CT-W650R]
U.S., Canadian model ..... 26 W
Other models ..... 26 W
[CT-W550R]
U.S., Canadian model ..... 26 W
Other models ..... 26 W
Dimensions
[CT-W550R U.S., Canadian model]
..... 420 (W) ×123 (H) ×268 (D) mm
16-9/16 (W) ×4-13/16 (H) ×10-9/16 (D) in.
[Other models]
..... 420 (W) ×128 (H) ×268 (D) mm
16-9/16 (W) ×5-1/16 (H) ×10-9/16 (D) in.
Weight
[CT-W650R] ..... 4.7 kg (10 lbs. 6 oz.)
[CT-W550R] ..... 4.6 kg (10 lbs. 2 oz.)

## Accessories

Operating instructions ..... 1
Connection cord with pin plugs ..... 2
Remote control cord ..... 1
CD·DECK SYNCHRO control cord ..... 1

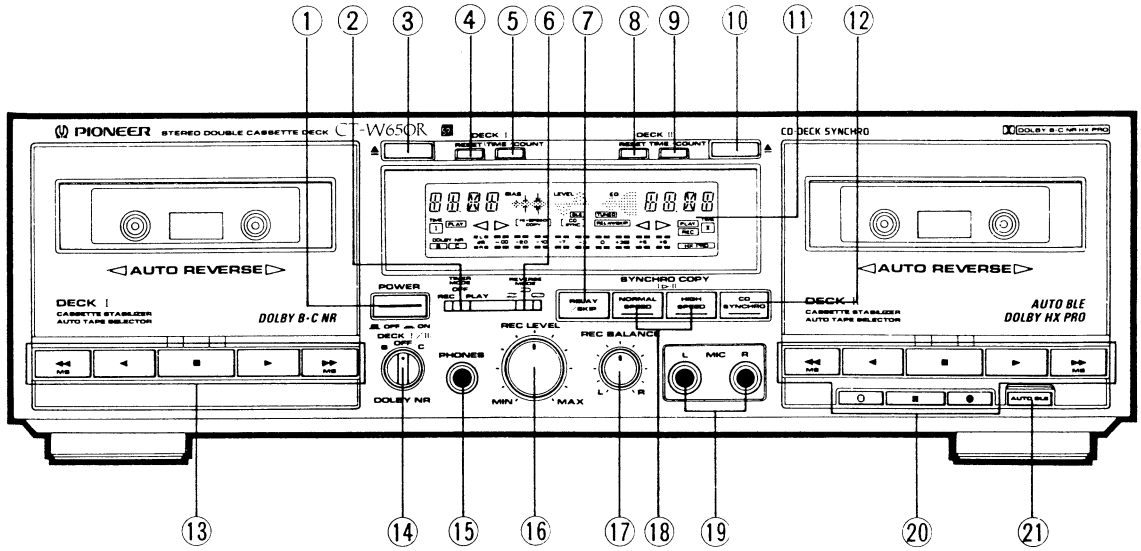
## Features

- AUTO BLE tuning system (CT-W650R only)
- DOLBY HX PRO recording function
- DOLBY B/C type NR
- Music search over ±15 selections
- Synchronized copy start
- High-speed and normal-speed copy (Deck I → Deck II)
- Relay playback/blank skip
- 4-digit electronic tape/time counter
- Michrophone jacks (CT-W650R only)
- Peak level meter with peak-hold function
- MPX FILTER (Interlocks with Dolby NR switch)
- Automatic recording mute
- Automatic tape selectors
- System remote control available
- Timer recording
- Timer playback (Automatic relay on)
- CD ·DECK SYNCHRO function
- Headphones jack
- Automatic reverse

*NOTE:*
*Specifications and design subject to possible modifications without notice due to improvements.*

# 12. PANEL FACILITIES

The illustration shows model CT-W650R.




## ① Power switch (POWER ▬ ON / ▬ OFF)

## ② Timer mode switch (TIMER MODE/REC/ OFF/PLAY)

## ③ Deck I eject button ( ⏏ )

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

*NOTE:*
*If the power is turned off while the tape is moving, the cassette door may remain locked. In this case, turn the power on before pressing the eject ( ⏏ ) button.*

## ④ Deck I counter reset button (RESET)

## ⑤ Deck I counter mode button (TIME/COUNT)

## ⑥ Reverse mode switch (REVERSE MODE)

## ⑦ Relay/Skip button (RELAY/SKIP)

## ⑧ Deck II counter reset button (RESET)

## ⑨ Deck II counter mode button (TIME/COUNT)

## ⑩ Deck II eject button ( ⏏ )

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

*NOTE:*
*If the power is turned off while the tape is moving, the cassette door may remain locked. In this case, turn the power on before pressing the eject ( ⏏ ) button.*

## ⑪ Function display

## ⑫ CD · DECK SYNCHRO recording button (CD SYNCHRO)

## ⑬ Deck I operation buttons

- ◀◀ Fast reverse/Music search
- ▶▶ Fast forward/Music search
- ▶ Forward playback
- ■ Stop
- ◀ Reverse playback

## ⑭ Dolby* NR switch (DOLBY NR B/OFF/C)

*

- *Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.*
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## ⑮ Headphones jack (PHONES)

## ⑯ Recording level control (REC LEVEL)

## ⑰ Recording balance control (REC BALANCE)

## ⑱ Synchro copy buttons (SYNCHRO COPY I ▷ II, NORMAL SPEED/HIGH SPEED)

- NORMAL SPEED: Copying at normal speed.
- HIGH SPEED: Copying at twice normal speed.

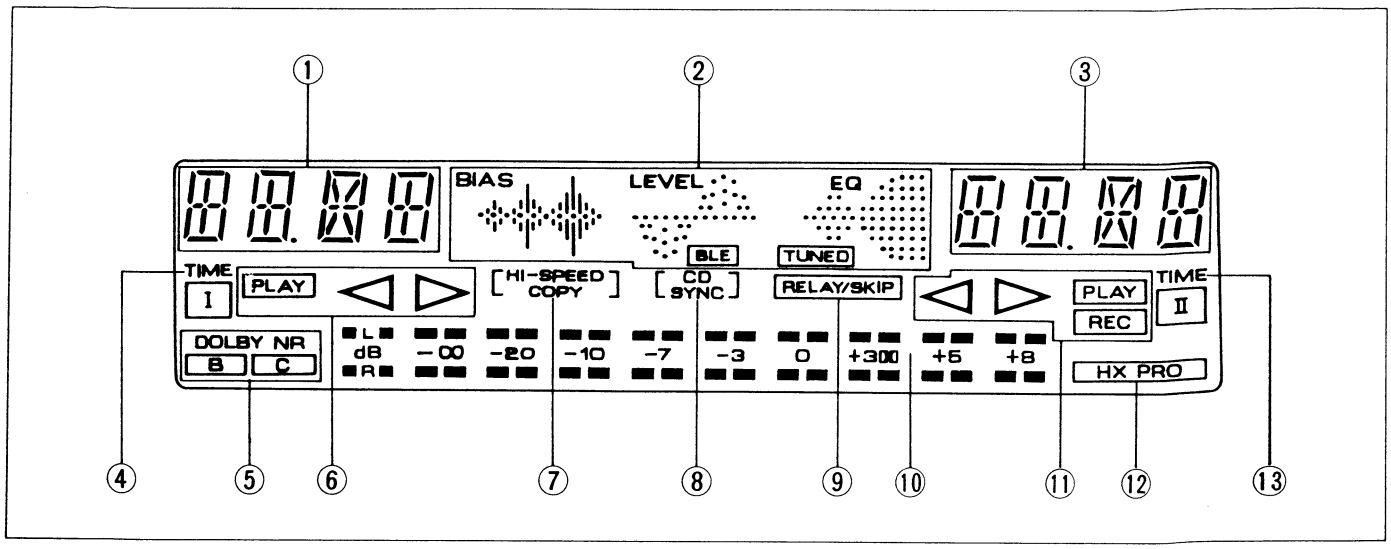
## ⑲ Microphone jacks (MIC L,R, CT-W650R only)

## ⑳ Deck II operation buttons

- ◀◀ Fast reverse/Music search
- ▶▶ Fast forward/Music search
- ▶ Forward playback
- ■ Stop
- ◀ Reverse playback
- O Recording mute
- II Pause
- ● Recording

## ㉑ Deck II AUTO BLE button (CT-W650R only)

## FUNCTION DISPLAY




### ① Deck I counter indicator

Normally the tape number or time counter is displayed.
Flashes for 4 seconds after the power is turned on.

### ② AUTO BLE indicator (CT-W650R only)

### ③ Deck II counter indicator

Normally the tape number or time counter is displayed (see page 9).
Flashes for 4 seconds after the power is turned on.
During AUTO BLE tuning, indicates BIAS, LEVEL, EQ, or Err.

### ④ Deck I TIME counter indicator

Lights during time counter mode.

### ⑤ DOLBY B/C NR indicator

### ⑥ Deck I tape transport mode indicators

### ⑦ Copy indicators

COPY: Copying at normal speed.
HI-SPEED COPY: Copying at twice normal speed.

### ⑧ CD·DECK SYNCHRO indicator (CD SYNC)

Lights when CD·DECK SYNCHRO recording from a CD player is being carried out.

### ⑨ RELAY/SKIP indicator

Lights when the RELAY/SKIP button is pressed to enter relay play-back/blank skip mode.

### ⑩ Level meter

Holds peak for about 1.2 seconds.
The ▯▯ mark beside the +3dB mark indicates the Dolby NR system reference level.

### ⑪ Deck II tape transport mode indicators

### ⑫ Dolby HX Pro indicator (HX PRO)

### ⑬ Deck II TIME counter indicator

Lights during time counter mode.